Paolo Riva · Jennifer Eck *Editors*

Social Exclusion

Psychological Approaches to Understanding and Reducing Its Impact

Springer

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and Reducing Its Impact

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The Many Faces of Social Exclusion

Paolo Riva and Jennifer Eck

Social exclusion has many faces. From the cradle to the retirement home, in school, in the workplace, and in online social networks, people are at a constant risk of experiencing threats to their social belonging. For centuries, philosophers and scientists have argued that human beings are essentially social beings; that is, they are intrinsically driven by a desire to form and maintain social connections (Aristotle's Politiká about 325 B.C.; Baumeister & Leary, 1995; James, 1890). It is thus not surprising that social exclusion represents one of the most alarming and unpleasant experiences for humans.

This volume reviews the different psychological approaches to understanding the impact of social exclusion and possible ways to reduce its negative consequences. Terms such as rejection, ostracism, discrimination, dehumanization, and social isolation refer to different phenomena. Nevertheless, researchers have often used these terms interchangeably in the past. In keeping with others (Leary, Twenge, & Quinlivan, 2006; Williams, 2009), we note the relevance of adopting each term (e.g., ostracism, rejection) with precision to be able to shed light on factors that might be specific of each phenomenon and those that might link them together. In parallel, we acknowledge the need for an overarching conceptualization that can link together several threats to social belonging. We chose to adopt the term *social exclusion* throughout the volume to include different varieties of threats to social belonging. In this book, social exclusion is broadly defined as the experience of being kept apart from others physically (e.g., social isolation) or emotionally (e.g., being ignored or told one is not wanted). In our view, social rejection—defined as being explicitly told one is not wanted—and ostracism—primarily characterized by being ignored—represent the two core experiences of social exclusion to which other types of social exclusion such as discrimination, social isolation, and dehumanization can be assigned (see also Chap. 1 in this volume). Therefore, we propose a hierarchical model that has social exclusion as umbrella term on top, followed by the two key experiences, social rejection and ostracism, which are further subdivided into several, more specific exclusionary experiences (e.g., discrimination, social isolation, and dehumanization).

Within this conceptual framework, this volume aims to 1) bring together different psychological approaches to the topic of social exclusion and 2) review the relatively new development of ways to reduce the negative impact of social exclusion. The first goal was set because of the fact that the vast majority of past research on social exclusion was conducted and published within different psychological subdisciplines (e.g., social psychology). Over the years, the different psychological approaches to the topic of social exclusion have developed more or less independently from each other. We think, however, that this development largely impedes scientific progress. By combining the psychological subdisciplines' research on social exclusion in a single volume, which allows comparing (and contrasting) different perspectives, theories, paradigms, and findings, we hope to contribute to a better understanding of the phenomenon across psychological approaches and to initiate the development of new and more integrative research models. Specifically, this volume includes contributions of social psychology, social neuroscience, developmental psychology, educational psychology, work and organizational psychology, clinical psychology, and social gerontology to provide a comprehensive overview of social exclusion research.

The second goal was set because of the fact that most of the existing research on social exclusion focuses on the negative consequences of the phenomenon. Knowing the negative effects of exclusion is indeed relevant as social exclusion occurs in a variety of contexts, from the cradle to the retirement home. However, there is also an urgent need for knowing feasible ways to reduce the negative impact of exclusion. This volume therefore introduces recent developments on the psychological strategies and the neural mechanisms that can reduce the negative consequences of social exclusion.

Part I lays the groundwork for the understanding of social exclusion research reviewed in this volume. Specifically, Chapter 1 describes the different instances of social exclusion in everyday life and illustrates why research on social exclusion is relevant. The different types of social exclusion occurring in everyday life are discussed in the context of the core experience to which they belong: social rejection (characterized by direct negative attention suggesting one is not wanted) or ostracism (primarily characterized by the experience of being ignored). Moreover, this chapter introduces a theoretical integration of different types of social exclusion by considering the possibility that these experiences elicit subjective feelings of being ostracized (i.e., feeling ignored) even if the experience does not involve being directly ignored. Finally, the chapter discusses directions for future research on social exclusion, including further theoretical integration of types of social exclusion, the key underlying psychological mechanisms, and emotional responses.

Next, Chapter 2 gives an overview of methods to experimentally investigate the antecedents, moderators, and consequences of social exclusion. To help scholars of different psychological subdisciplines select the experimental method that best suits their research questions, Chapter 2 provides a decisional tree that guides them from the main categories of methods to the specific paradigms. The three main categories are based on the methods used to deliver the social exclusion manipulation.

Specifically, these are interactions with computer avatars, interactions with other individuals, and written material manipulations. For each category, the chapter describes the specific paradigms researchers use such as Cyberball, the get-acquainted paradigm, and the future life alone paradigm, provides case studies showing how the paradigms work, and discusses the general benefits and limitation of each paradigm. For specific paradigms, the chapter also provides descriptions of alternative paradigms.

Part II focuses on the contributions that different psychological subdisciplines make to the topic of social exclusion. Although in the beginning social exclusion was primarily investigated in social psychology, in more recent years scholars from several psychological subdisciplines (e.g., social neuroscience, work and organizational psychology, clinical psychology) have started examining this phenomenon with different approaches, in specific samples (e.g., children, employees, patients), and in different contexts (e.g., school, workplace). Part II includes the most relevant psychological perspectives on social exclusion to advance our understanding of the many faces of exclusion.

The first contribution in Part II is devoted to social psychology. The phenomenon of social exclusion has a straightforward connection with the field of social psychology—the scientific study of how the actual, imagined, or implied presence of others influences people's feelings, thoughts, and behaviors (Allport, 1985). Already classic experiments showed that people are willing to agree to others' blatantly false answers in order to be liked and accepted (Ash, 1951) and refuse to help because of the fear of being negatively judged (Darley & Latané, 1968). However, it was only during the last two decades that social psychologists provided a significant amount of theoretical and empirical research on the phenomenon. Chapter 3 begins by considering the evolutionary roots of social exclusion and the reasons why social exclusion has such a strong impact on humans. Then, it reviews the consequences of both short- and long-term social exclusion. Finally, the chapter discusses social psychological research on models, mechanisms, and moderators of the experience of social exclusion.

The propensity to form and maintain social connections with others is headquartered in the human brain. The interdisciplinary field of social neuroscience investigates how the brain mediates social interactions (and the lack thereof). From its foundation (Cacioppo & Berntson, 1992), the young field of social neuroscience has quickly placed its focus on social exclusion, conducting studies which often had a large impact on the scientific community, even outside the field of social neuroscience (e.g., Eisenberger, Lieberman, & Williams, 2003). However, these studies also led to controversies, and some of the most heated confrontations within the field of social neuroscience concern how the brain detects and responds to threats to social belonging. In Chapter 4, the authors argue that the brain is the fundamental organ for forming, monitoring, maintaining, repairing, and replacing social connections. After reviewing the main methodological approaches, the chapter discusses the neural correlates of different instances of social exclusion, including loneliness, ostracism, and romantic rejection.

Early theories argued that a child's bond to the caregiver is based primarily on the child's need for food (Dollard & Miller, 1950). However, following seminal research like that of Harlow (1958) on infant monkeys in social isolation and Bowlby (1953) on human attachment, scholars converged on the notion that children come into the world with an innate predisposition of forming attachments with others. The contribution of developmental psychology focuses on the consequences of social exclusion in early stages of human development. More specifically, Chapter 5 focuses primarily on intergroup instances of social exclusion, namely, social exclusion of children and adolescents based on group membership, such as gender, race, ethnicity, sexual orientation, or culture. Considering that much work has already been devoted to interpersonal forms of social exclusion, this chapter extends our knowledge on the developmental origins of social exclusion by highlighting the relevance of stereotypes, social norms, social identity, and prejudice for understanding social exclusion among children and adolescents.

As children grow, peers become more and more fundamental for their life and development. Educational psychology has devoted a great deal of effort to understanding the impact of social exclusion within the school context. The influence of peers within the classroom can both promote and hinder a student's learning and achievement. The notion that exclusionary phenomena, such as bullying and ostracism, are detrimental for a child's ability to learn and develop at school has become almost uncontroversial. Chapter 6 discusses consequences of peer group rejection and behavioral exclusion on classroom engagement, achievement, and psychoeducational adjustment. Specifically, the chapter presents the history and main conceptualizations of social exclusion in the school context, describes the different ways social exclusion has been measured within the classroom, and reviews the most prominent theories and research on the origins and correlates of social exclusion in school.

After school, the workplace becomes a relevant context for many adults. Phenomena such as rejection and ostracism are documented as common behaviors also in the workplace. Research has shown that exclusionary phenomena such as rejection, ostracism, and harassment negatively affect work performance and lead to detrimental behaviors and health problems. Thus, social exclusion in the workplace can harm not only the employees but also their organization. Chapter 7 examines how social exclusion is conceptualized and investigated in an organizational setting. The chapter considers the reasons why social exclusion occurs in an organizational setting as well as the impact it has on employees' well-being and work-related behaviors. Specifically, it reviews the main consequences associated with workplace exclusion, including work attitudes, work performance, and well-being. This chapter also discusses relevant approaches that managers can use in the workplace in order to prevent or reduce the incidence of social exclusion.

In recent years, clinical psychologists have started investigating the effects of social exclusion in clinical samples to reveal psychological conditions associated with a lower or higher sensitivity to social threats. Indeed, there seems to be a sensitivity level that is functional to properly detect signals of social exclusion (Williams, 2009), and both a lack of the ability to properly detect exclusionary

signals and an oversensitivity to them can have detrimental consequences. Moreover, clinical psychologists have suggested that social exclusion can contribute to the onset and the maintenance of various psychological disorders, including anxiety disorders, depression, and personality disorders. Along these lines, Chapter 8 examines the link between social exclusion and a variety of DSM-5 diagnostic categories, ultimately arguing that social exclusion can be considered as a transdiagnostic risk factor for many clinical conditions. The chapter also discusses the variables that likely explain both the common and the specific effects of social exclusion in the context of traditional diagnostic labels.

Social exclusion can occur at any age. Older adults are especially at risk of social isolation (i.e., being kept apart from others physically) that has been found to predict increased mortality, even after controlling for other well-established health risk factors (e.g., smoking; House, Landis, & Umberson, 1988). The last contribution of Part II is devoted to social gerontology. Specifically, Chapter 9 reviews research on social isolation, integration, and ageism, and their relationship to psychological factors such as loneliness (i.e., perceived social isolation) among the elderly. This chapter also reviews social interventions based on volunteerism that may help prevent or reduce social exclusion among older adults. One of the key tenets of this chapter is that social exclusion is not an inescapable consequence of aging. Older adults, as well as young people, can learn how to avoid social exclusion and how to deal with it in a functional way, which brings us to Part III of this volume.

Part III discusses the latest research on approaches that can reduce the negative impact of social exclusion. While the negative consequences of social exclusion have been widely documented in the past years, research on possible approaches that can mitigate social exclusion's negative impact is still limited. However, scholars have recently began to investigate ways to reduce the effects of exclusion more intensely and found a few promising avenues. One of the key aims of this volume is to provide the readers with the state-of-the-art knowledge on psychological research devoted to reducing and buffering against the negative effects of exclusion.

The first chapter of Part III focuses on emotion regulation strategies following social exclusion. Accordingly, this chapter considers the impact of emotion regulation strategies on responses to social exclusion by integrating findings from the literature on reactions to social exclusion with contemporary models of emotion regulation. In doing so, Chapter 10 introduces a two-dimensional model of emotion regulation to social exclusion. Regulatory strategies including suppression, distraction, reappraisal, and aggression are reviewed and classified along a cognitive–behavioral dimension and an approach–avoidance dimension. Finally, this chapter shows how specific cognitive and behavioral strategies can reduce the dysfunctional and detrimental consequences of social exclusion while enhancing an individual's ability to employ functional responses to it, ultimately increasing an individual's inclusionary status and psychological well-being.

Chapter 11 focuses on strategies that help cope with or buffer against the negative impact of social exclusion on basic needs. Coping strategies are utilized after the individual has shown reflexive responses to social exclusion (e.g., need threat, negative affect) and help prevent maladaptive reflective responses to social exclusion

such as social withdrawal and aggression by restoring basic needs satisfaction and improving mood. Coping strategies reviewed in the chapter are reminders of social bonds, social surrogates, and turning to religion. In contrast to coping strategies, buffering strategies are utilized prior to or at the onset of an exclusionary episode and help mitigate or prevent the reflexive responses to social exclusion. The buffering strategies reviewed in this chapter are social companionship during the exclusionary event, belonging to a majority, thinking about money, and visualizing oneself in a powerful position.

The last chapter of Part III discusses brain mechanisms involved in regulating negative reactions caused by social exclusion. Neuroimaging studies focusing on reactions to social exclusion have consistently found that a higher prefrontal cortical activity is associated with lower levels of experiencing social pain. Chapter 12 draws from different literatures including that on emotion regulation, self-affirmation, and mindfulness to suggest ways in which both automatic and controlled brain responses to social exclusion can be modulated to promote functional responses to exclusionary experiences. Specifically, the chapter focuses on regulatory strategies for promoting affiliative rather than aggressive responses to exclusion, for mitigating self-control failure after exclusion, for reducing detrimental peripheral responses to exclusion, and for re-living social exclusion. Finally, the chapter considers the role of individual differences in how people respond to social exclusion, arguing that interventions and scientific hypotheses must be theoretically customized to accommodate variation along relevant trait dimensions.

Part IV provides a final assessment of the research reviewed in this volume. Specifically, the concluding chapter summarizes theories, methods, and research findings of the different psychological approaches covered in this volume and discusses similarities and differences between them. The aim of the chapter is to identify starting points to bridge the gap between different psychological subdisciplines. The chapter starts with a discussion of the importance of a consistent terminology for social exclusion experiences, followed by a section on the study of social exclusion, which includes relevant methodological issues related to the reviewed experimental paradigms. The section on theories of social exclusion highlights the need for a comprehensive model on the consequences of social exclusion and their moderating factors that can be applied across different psychological approaches. The last section on interventions to reduce social exclusion effects focuses on the applicability of ways to mitigate the negative impact of social exclusion across different contexts.

From school shootings to domestic violence, from cognitive impairment to suicide attempts, the consequences of the many faces of social exclusion have been widely documented. However, this volume is the first that brings together different psychological approaches to the topic of social exclusion. Specifically, it provides the reader with psychological perspectives, theories, methods, and research findings that help understand the specificity of the psychology of social exclusion in different contexts (e.g., classroom, clinical setting, and workplace). Scholars with expertise in social psychology, social neuroscience, developmental psychology, educational psychology, work and organizational psychology, clinical psychology,

and social gerontology offer complementary approaches that help grasping the complexity of the phenomenon. Moreover, this volume reviews the recent developments on ways to reduce the negative impact of social exclusion. This relatively new and promising approach calls for more future research. Taken together, we hope that the chapters in this volume help bridge the gap between different psychological approaches to the topic of social exclusion and help encourage research cooperations across different psychological subdisciplines.

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Part I
Social Exclusion as a Field of Research

Social Exclusion in Everyday Life

Eric D. Wesselmann, Michelle R. Grzybowski, Diana M. Steakley-Freeman, Eros R. DeSouza, John B. Nezlek, and Kipling D. Williams

Humans are social animals—they have a strong need for stable social relationships and much of their daily thoughts, feelings, and behaviors can be understood within the context of satisfying this need (Baumeister & Leary, 1995). Many social scientists argue that this need has an evolutionary underpinning. Humans evolved to forge and maintain social connections with others in order to obtain survival and reproductive advantages; as such, they are sensitive to any cue that signals threat to these connections (e.g., Lieberman, 2013; MacDonald & Leary, 2005; Wesselmann, Nairne, & Williams, 2012). Because humans have this central focus on social connections, they experience both negative psychological and physical outcomes when these connections are threatened or severed (MacDonald & Jensen-Campbell, 2011). Researchers have argued that individuals literally experience *social pain* in these situations, exhibited in both phenomenological and neurological pain measures (Chen, Williams, Fitness, & Newton, 2008; Eisenberger, Lieberman, & Williams, 2003).

There are various social experiences that psychologists have argued can communicate real (or perceived) threat to social connections. Many of these threats are subtle, ambiguous, and sometimes unintentional (Banki, 2012; Kerr & Levine, 2008; Richman & Leary, 2009). Theorists have created models to organize the diverse

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theoretical and operational definitions of experiences that threaten social connections (Robinson, O'Reilly, & Wang, 2013; Richman & Leary, 2009; Williams, 2009). Most theorists agree that two core experiences are *rejection* (generally defined as being explicitly told or implied that one is not wanted in a social relationship; Blackhart, Knowles, Nelson, & Baumeister, 2009; Williams, 2007), and *ostracism* (primarily characterized by being ignored by an individual or group; Williams, 2007). Some theorists also argue that other types of negative social experiences can involve being socially excluded, such as discrimination and stigmatization (Goffman, 1963; Kerr & Levine, 2008; Kurzban & Leary, 2001; Richman & Leary, 2009; Richman, Martin, & Guadagno, 2016). Regardless, each experience involves individuals perceiving cues suggesting they are being *relationally devalued* by someone, a group, or society as a whole (Richman & Leary, 2009). Leary (1999) argued that humans attend to their surroundings for any information concerning how other people evaluate them in terms of value, closeness, or importance. Further, humans are sensitive to the merest hint (verbal or nonverbal) that others may devalue or otherwise reject them and these cues often elicit pain, negative affect, and other negative psychological outcomes (Kerr & Levine, 2008; Pickett & Gardner, 2005). Even though cues of relational devaluation are context dependent, data suggest that there are few (if any) situations in which social exclusion will not bother individuals at all (Gerber & Wheeler, 2014; Williams, 2009; Wirth, Bernstein, Wesselmann, & LeRoy, 2015).

Social Exclusion: Being kept apart from others physically or emotionally

Rejection: Direct negative attention
- Dehumanizing language
- Discrimination & stigmatization
- Hurtful laughter
- Microaggressions
  - Microassaults
  - Microinsults
  - Microinvalidations

Ostracism: Being ignored
- Averted eye gaze
- Being forgotten
- Information exclusion ("out-of-the-loop")
- Language exclusion
  - Biased language
  - Linguistic ostracism
- Uncomfortable silence

Typical Negative Psychological Outcomes

Short-term exclusion
- Anti-social intentions & behaviors
- Basic need threat (belonging, control, meaningful existence, self-esteem)
- Dehumanization
- Negative affect (e.g., anger, humiliation, sadness, shame)
- Neurological pain & "hurt feelings"
- Perceived ostracism (i.e., feeling ignored & excluded)
- Relational devaluation

Long-term exclusion
- Alienation
- Depression
- Helplessness
- Meaninglessness

Fig. 1 Taxonomy of social exclusion experiences and outcomes in everyday life

In this chapter, we consider various experiences that communicate relational devaluation under the general label of *social exclusion*, broadly defined as the experience of being kept apart from others physically or emotionally (see chapter "The Many Faces of Social Exclusion") and we acknowledge the conceptual and empirical differences when relevant. We then group these social experiences in two subcategories: *rejection* (defined as direct negative attention suggesting one is not wanted) and *ostracism* (primarily characterized by the experience of being ignored; Fig. 1). We ultimately propose that even if one is not being ignored directly (i.e., someone purposefully ignores another person), any type of social exclusion may increase feelings of being ignored, and suggest these perceptions may account for why many social exclusion experiences have similar negative psychological outcomes (Fig. 1). Finally, we use these arguments as a starting point for suggesting future theory and research development among scholars interested in social exclusion.

Rejection: Direct Negative Attention

People experience interpersonal rejection any time they perceive social cues that someone does not want to have a relationship with them. Rejection occurs in various social contexts (Leary, 2001), from childhood peer groups (Asher, Rose, & Gabriel, 2001), family units (Fitness, 2005), romantic relationships (Baumeister & Dhavale, 2001; Tong & Walther, 2011) to task groups (Leary, Tambor, Terdal, & Downs, 1995; Ouwerkerk, Kerr, Gallucci, & Van Lange, 2005). When people are rejected, they experience decreased feelings of acceptance and self-esteem (Leary et al., 1995; Nezlek, Kowalski, Leary, Blevins, & Holgate, 1997; Wirth et al., 2015) and increased aggression (Tuscherer et al., 2015; Twenge, Baumeister, Tice, & Stucke, 2001; Wesselmann, Butler, Williams, & Pickett, 2010).

Dehumanizing Language

Rejection cues can be communicated verbally in various ways beyond explicitly telling others they are not wanted. One way involves using derogatory and dehumanizing terms to refer to individuals or groups (e.g., slurs or animalistic metaphors). When individuals use language that dehumanizes others, they essentially are suggesting the targets are inferior on dimensions considered central to "being human" (Demoulin et al., 2004; Demoulin, Saroglou, & Van Pachterbeke, 2008; Haslam, 2006). These individuals are perceived to be beyond general boundaries of fair and moral treatment (Goff, Eberhardt, Williams, & Jackson, 2008; Optow, 1990a, 1990b); they are excluded from the largest group of people imaginable—humanity (Mullen, 2004; Mullen & Rice, 2003). Just as social exclusion can generally make targets feel "less human" (Bastian & Haslam, 2010), dehumanizing language can also exacerbate the pain of social exclusion manipulations in laboratory research (Andrighetto, Riva, Gabbiadini, & Volpato, in press).

Microaggressions

Members of minority groups often experience social rejection via discrimination and stigmatization (Richman et al., 2016; Richman & Leary, 2009). A new area of research has emerged focusing on social behaviors that members of minority groups often experience—microaggressions. Microaggressions are brief and subtle everyday comments, insults, or behaviors that may be conscious/explicit or unconscious/implicit (Constantine, 2007; Sue et al., 2007). Sue et al. (2007) identified three types of racial microaggressions: microassaults, microinsults, and microinvalidations. *Microassaults* are frequently conscious and are similar to old-fashioned racism; they include explicit verbal (e.g., racial epithets) or nonverbal (e.g., purposely avoiding individuals due to their race/ethnicity) acts. *Microinsults* constitute subtle rude and insensitive communication that implicitly degrades an individual's race/ethnicity. An example of this microaggression type would be when a Black American college student is asked how s/he "got into college," the implication being that Black Americans are incapable of being accepted on their own merits and only enter college due to affirmative action. *Microinvalidations* represent exchanges that implicitly invalidate, negate, and exclude the thoughts, feelings, or experiences of ethnic minority members. An example of this type would be if someone compliments an Asian American on speaking English well, the compliment subtly invalidates the recipient's American heritage, suggesting that the recipient of the compliment is foreign. The aggressor fails to acknowledge the victim's American identity.

Nadal (2011) developed a taxonomy of microaggressions and created a scale to measure how often racial and ethnic minorities experience each type in their daily lives: *Assumptions of inferiority* (e.g., assuming someone was poor or had a lower education because of race), *second-class citizen and assumptions of criminality* (e.g., physically avoiding someone or showing signs of fear because of race), *microinvalidations* (e.g., claiming that members of minority groups do not experience racism anymore, or that society simply is becoming too "politically correct"), *exoticization/assumptions of similarity* (e.g., assuming someone speaks a language other than English because of race), *environmental microaggressions* (e.g., observing negative media portrayals of one's race), and *workplace/school microaggressions* (e.g., being treated differently at school or work because of race). Each of these microaggression types correlates with targets' perceptions of experiencing general prejudice in their daily lives. Many of these behaviors may seem ambiguous or innocuous, but data suggest they can have damaging psychological consequences that last from days to years (Chakraborty & McKenzie, 2002; Clark, Anderson, Clark, & Williams, 1999; Sue, Capodilupo, & Holder, 2008). Other researchers have extended this research to assess microaggressions in other groups, such as gender (Capodilupo et al., 2010; Nadal, 2010), sexual orientation and transgender microaggressions (Nadal, Rivera, & Corpus, 2010), people with disabilities (Keller & Galgay, 2010), socioeconomic status (Smith & Redington, 2010), and religion (Nadal, Issa, Griffin, Hamit, & Lyons, 2010).

Given that discrimination and stigmatization can be considered types of rejection (Richman & Leary, 2009), it is reasonable to assume targets of microaggressions experience similar psychological outcomes caused by the other types of rejection.

Steakley-Freeman, DeSouza, and Wesselmann (2015) collected preliminary data exploring this idea by recruiting 235 biracial or multiracial participants via Amazon Mechanical Turk. Participants completed Nadal's (2011) measure assessing the frequency with which they had experienced various types of microaggressions over the last 12 months. Participants also provided details about each type of microaggression they experienced. Finally, participants answered questions about how socially excluded they recalled feeling during the event(s) they experienced. Preliminary analyses suggest that both *second-class citizen and assumptions of criminality* and *workplace/school microaggressions* made participants feel "excluded"; the other types did not show this effect. We stress that these findings are preliminary but suggest there is a link between certain types of microaggressions and exclusion. Future research should investigate if these differential patterns replicate, and if so, explore potential reasons for why some types of microaggressions influence feelings of exclusion and others do not.

Ostracism: Being Ignored

One of the most extreme types of social exclusion is *ostracism*—primarily characterized by being ignored by others (Williams, 2007). There are many reasons for humans to ostracize one another; a common use is to bond groups together and enforce social norms by disciplining wayward members (Williams, 2009). Ostracism can also be used to protect the group by expelling harmful, diseased, or otherwise burdensome group members who threaten group survival or functioning (Kurzban & Leary, 2001; Schachter, 1951; Wesselmann, Williams, & Wirth, 2014). This phenomenon has been widely studied, from school settings among both young children and adolescents (Gilman, Carter-Sowell, DeWall, Adams, & Carboni, 2013; Saylor et al., 2012; Twyman et al., 2010; see chapters "Research in Developmental Psychology: Social Exclusion Among Children and Adolescents" and "Research in Educational Psychology: Social Exclusion in School"), adults in the workplace (Ferris, Brown, Berry, & Lian, 2008; Leung, Wu, Chen, & Young, 2011; Robinson et al., 2013; see chapter "Research in Work and Organizational Psychology: Social Exclusion in the Workplace"), and specific online interactions (mostly with college student participants; Kassner, Wesselmann, Law, & Williams, 2012; Smith & Williams, 2004; Williams et al., 2002; Williams, Cheung, & Choi, 2000). This literature suggests that regardless of who is ostracized or the reason for it, the experience generally threatens basic psychological needs (i.e., belonging, control, meaningful existence, and self-esteem; Williams, 2009), increases negative affect, and causes other physiological and psychological problems (Williams & Nida, 2011; see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion"). Individuals who are ostracized chronically may eventually develop feelings of alienation, depression, helplessness, and meaninglessness (Williams, 2009; Riva et al. 2016).

Most research on ostracism has used cross-sectional surveys or laboratory-based experimental methods (see chapter "Methods for Investigating Social Exclusion"). Although research using such methods has been informative, these methods have

limitations. For example, in terms of studying daily experiences, cross-sectional surveys typically ask participants to make some type of response that requires them to aggregate their experiences across a sometimes unclear or lengthy period of time. Although experimental studies may allow researchers to make stronger conclusions about causality than surveys, the manipulations used in experiments can sacrifice ecological and external validity for experimental control. Experimenters generally design ostracism manipulations to be strong so that participants clearly recognize they are being ostracized during their social interaction, but these manipulations may not represent all aspects of how ostracism occurs in other everyday social contexts.

To complement cross-sectional survey and experimental research on ostracism, Nezlek, Wesselmann, Wheeler, and Williams (2012) examined how people react to ostracism in their everyday lives using an *event-contingent* diary method (Wheeler & Reis, 1991). In studies using an event-contingent diary, participants record and describe all events that meet certain criteria during a specified period of time. Such methods reduce the influence that recalling single events may have on global retrospective assessments, minimize the influence of the difficulty in recalling distant events accurately, and provide more reliable measures than traditional cross-sectional surveys (Nezlek, 2012, pp. 3–5).

Nezlek et al. (2012) used an event-contingent method to study the ostracism people experienced in everyday life. Every time participants felt ostracized, they described the event and how they felt about it. Participants were recruited from the general community of Sydney, Australia, and they maintained a diary for 2 weeks. Before keeping the diaries, participants were instructed about how to maintain the diary. These instructions ensured that participants would use the same criteria to classify when they had been ostracized, and would use the same criteria when describing the event on the scales that were part of the diary form. Participants indicated that they experienced about one ostracism episode every day, which ranged from mild/unimportant (e.g., a stranger did not acknowledge them) to extreme (e.g., their spouse gave them the silent treatment).

Being ostracized threatened participants' basic need satisfaction regardless of extremity. Participants most commonly reported being ostracized by strangers, acquaintances, and friends, but the few times they were ostracized by a partner or relative evoked the strongest adverse reactions. Eighty percent of the time, people were ostracized by someone of the same social status (vs. lower or higher), suggesting that most ostracism occurs on a peer-to-peer basis. These findings replicated the basic effects found in survey and laboratory studies, while providing a basis to examine the role of situational characteristics and other aspects of ostracism that cannot be studied well in the laboratory or with surveys.

Averted Eye Gaze

Interestingly, Nezlek et al. (2012) found that some participants indicated feeling ostracized when strangers did not give them eye contact in public situations

(e.g., transportation, pedestrian areas). Although this finding could have been because the researchers trained participants to look for ostracism episodes in their daily lives, other research confirms that eye contact can be a powerful social cue to convey relational value or to make another person feel ostracized. For example, early ostracism research found that participants identified averted eye contact as a primary cue for communicating ostracism to others (Williams, Shore, & Grahe, 1998). Further, both laboratory and field experiments demonstrate that averted eye gaze from live or virtual confederates can induce feelings of ostracism and basic need threat similar to traditional ostracism manipulations (Böckler, Hömke, & Sebanz, 2014; Wesselmann, Cardoso, Slater, & Williams, 2012; Wirth, Sacco, Hugenberg, & Williams, 2010).

Information Exclusion

Another common experience individuals may face is being excluded from important social information, colloquially called being "out-of-the-loop" (Jones, Carter-Sowell, Kelly, & Williams, 2009). Individuals may experience informational exclusion in various contexts whenever they perceive being uninformed of information mutually known by others (e.g., family, friends, coworkers). Researchers have focused mostly on information exclusion in task groups and found that information exclusion decreases basic need satisfaction similar to other ostracism (and rejection) manipulations, in addition to decreasing one's liking and trust of their group members (Jones, Carter-Sowell, & Kelly, 2011). Jones and Kelly (2013) also show that having specialized knowledge (unique expertise) can make people feel "out of the loop" and lower need satisfaction, particularly when this knowledge is perceived as unimportant for the group task. Jones and Kelly (2010) demonstrated that participants' perception of being in poor group standing mediates the negative psychological effects of information exclusion. This perception of group standing can be considered akin to relational evaluation (Leary, 1999) specific to the task group context.

Language Exclusion

Using language to make others feel ostracized does not have to be purposeful—individuals may not even realize they are making others feel ignored in their presence. For instance, given that increased globalization has made organizations more culturally diverse and multinational, individuals have a higher likelihood of interacting with coworkers who speak different languages (Earley & Gibson, 2002). How do individuals feel when someone is conversing in front of them in a language they do not speak? Dotan-Eliaz, Sommer, and Rubin (2009) called this phenomenon *linguistic ostracism*. They assigned student participants task groups with two confederates who either spoke to one another in English or in Russian (a language their

American participants did not share). Participants who experienced linguistic ostracism reported feeling more rejected/ignored, and felt less positively about their partners. Further, participants higher in rejection sensitivity (i.e., those who anxiously anticipate, readily perceive, and respond extremely to interpersonal rejection; Downey & Feldman, 1996) reacted the most angrily to linguistic ostracism.

Similarly, Hitlan, Kelly, Schepman, Schneider, and Zárate (2006) found that although participants felt similarly disconnected from and prejudiced toward their group members regardless of whether these members ostracized them while speaking Spanish or English, they experienced more symbolic threat (i.e., felt that Mexican immigration threatened American culture) when ostracized in Spanish than when ostracized in English. This last finding is particularly interesting in light of continual immigration debates and hostile reactions in various countries to immigrants and refugees speaking their native languages or when government agencies offer services in different languages. Kang (2012) replicated this research using Chinese-speaking confederates and found that English-speaking participants felt similarly ostracized whether the confederates were speaking Chinese or English when ostracizing them. Interestingly, Kang found that participants had the most aversive reactions (measured by basic need threat) when the confederates spoke in Chinese directly to participants (i.e., included them in an unfamiliar language). Though not statistically significant, the data trends suggested that participants who were spoken to in an unfamiliar language experienced more antisocial thoughts toward the confederates and made more paranoid attributions about what the confederates were talking about, than participants who were ostracized regardless of the language the confederates were speaking. Future research on understanding anti-immigrant prejudice should consider how feelings of being ignored and excluded, as well as threats to basic need satisfaction, might facilitate this hostility.

Another way that language can be used to make others feel ignored (intentionally or otherwise) involves using biased language. Linguistic bias involves using words that refer to one specific social category, while disregarding others—gender bias is one of the most commonly studied examples. Gender bias in language is subtle because even if one does not intend to exclude different gender groups, using androcentric words like *man*kind instead of *human*kind can still make members of other gender groups (e.g., women and transgender individuals) feel excluded (Stout & Dasgupta, 2011). One of the first relevant studies demonstrated that women rated a job as less attractive if the advertisement language explicitly targeted men (Bem & Bem, 1973). This study used blatant sexist language; however, more recent research manipulates biased language in more subtle ways. Stout and Dasgupta (2011) gave women a job description containing gender-exclusive language (*he*), gender-inclusive language (*he or she*), or gender-neutral language (*one*). Women who read gender-exclusive language felt more ostracized and expressed less personal investment in the job compared to women in the other two conditions. These findings are troubling because consistent use of gender-exclusive language could create an unwelcome climate that ultimately discourages women from working in certain organizations or academic fields. Evidence also suggests that children perceive and internalize gender-exclusive language, which in turn influences the development of

their gender role schemas (Hyde, 1984; Liben, Bigler, & Krogh, 2002). Gender-exclusive language may communicate to individuals that these careers are only suited for men, thus discouraging women from pursuing certain career paths (e.g., STEM fields) starting at an early age (see Diekman, Clark, Johnston, Brown, & Steinberg, 2011, for a discussion of how gender roles influence STEM interests).

Future research should also investigate if biased language has similar effects in other social categories. For example, demographic questions about gender that do not include an option for transgender individuals may have similar effects as using biased pronouns. Also, questions about race may make members of certain categories feel excluded by the absence of a category (e.g., forms may specify biracial as a category but not multiracial). Another interesting possibility involves biased language and religious identity. Popular press commentators often debate what should be an appropriate holiday greeting (e.g., "Merry Christmas" versus "Happy Holidays"), arguing about whether or not using terms and symbols centered on a specific religion's holiday will make members of other religions (or nonreligious individuals) feel marginalized or excluded (Olsen & Morgan, 2009). Schmitt, Davies, Hung, and Wright (2010) conducted two experiments that tested this idea using holiday decorations. Participants completed various measures of psychological well-being (e.g., positive/negative affect, self-esteem) in cubicles; some participants had cubicles with Christmas decorations and other participants' cubicles had no decorations. Individuals who did not celebrate Christmas or identified as non-Christian experienced decreased well-being when they had decorations in their cubicles, and this effect was mediated by perceived inclusion (Christians or other individuals who celebrated Christmas, however, experienced an increase in well-being). These studies used decorations (symbols) instead of linguistic greetings, but it is possible that any verbal or nonverbal reminders of privileged social categories could make members of the non-privileged group feel less socially included.

Uncomfortable Silences

Koudenburg (2014) argues that the dynamics of interpersonal communication can be diagnostic of the conversation partners' overall relationship. Silence during interpersonal conversations is one dynamic that is often ambiguous and can be interpreted differently depending upon the overall context. This ambiguity is problematic because it can be (mis)interpreted as a threat to the solidarity of the interaction partners' social relationship (Koudenburg, Postmes, & Gordijn, 2013a). For example, Koudenburg, Postmes, and Gordijn (2011) found that brief pauses (e.g., 4 s) that disrupted participants' conversations were more likely to make the participants feel rejected, less socially validated, and decreased their feelings of belonging and self-esteem compared to participants who had smooth conversations. The researchers further found that participants' reactions to the smooth conversation condition did not differ from a baseline control condition, suggesting that smooth conversational flow is generally expected in many interactions. These researchers also found

brief silences can motivate group members with a high need to belong to change their attitudes to be more in line with the group's normative option (Koudenburg, Postmes, & Gordijn, 2013b). These results correspond with other research suggesting ostracism can be used as a social influence tactic within groups (Wesselmann et al., 2014; Williams, 2009).

E-based communication technology has increased the various ways that humans can communicate, and many of these ways involve asynchronous interactions. The ambiguity of silence may be even more problematic in these contexts because at least in synchronous communication (whether face-to-face, phone conversations, or video chats) partners may have various sources of verbal or nonverbal information to contextualize silence; "e-silence" does not provide the same contextual cues. Early research on e-based communication (e.g., email) found that individuals often assumed unexpected lag time between messages was deliberate and meaningful on the part of their communication partners (Bargh & McKenna, 2004; Rintel & Pittam, 1997; Thompson & Nadler, 2002). Smith and Williams (2004) conducted an experiment on ostracism via text messaging—participants sent text messages to two virtual confederates and were randomly assigned either to receive replies or not. This paradigm differed from previous e-based ostracism studies because those studies involved synchronous online interactions in which participants could see the confederates interacting and leaving them out in the process. In the texting paradigm, participants who did not receive reply messages did not see the other confederates communicating either, so the silence was ambiguous—were they being left out or were the devices malfunctioning? Interestingly, participants who did not receive messages did not assume that the lack of reply was due to technology but instead interpreted it as deliberate and felt ostracized by their texting partners.

Other researchers have found similar effects using a Facebook paradigm. Tobin, Vanman, Verreynne, and Saeri (2015) created temporary Facebook profiles for the participants and then asked them to post status updates. They also encouraged participants to post comments on each other's status updates. Participants randomly either received comments (posted by confederates) or did not receive any feedback. Compared to participants who received feedback, those participants who did not felt that people were less interested in their posts and reported less basic need satisfaction. Research using another Facebook-esque paradigm found that participants who received less "likes" to their posts also felt ostracized, compared to participants who received an average (or even an above-average) number of "likes" (Wolf et al., 2014). These findings are interesting because other research suggests that individuals use Facebook (and other social networking outlets) as ways to satisfy their need to belong and have regular social connections with others, especially if they are lonely, stigmatized, or otherwise feel like they are unable to forge relationships with people who will value them in their offline lives (Bargh, McKenna, & Fitzsimons, 2002; Becker, 2013; große Deters & Mehl, 2012; Knowles, Haycock, & Shaikh, 2015; McKenna & Bargh, 1998; McKenna, Green, & Gleason, 2002). Further, research suggests that individuals' need to belong and the degree to which they anticipate ostracism predict their perceived obligation to answer others' message immediately on Facebook and their general expectations that their own interaction partners would as well (Mai, Freudenthaler, Schneider, & Vorderer, 2015).

Future research should investigate how the change in social networking and other e-based communication media may change how ostracism is used in social relationships. Nezlek et al. (2012) found that participants reported experiencing ostracism in cyber interactions less than they did in offline social interactions. It is important to note, however, that the data were originally collected in 1999 when cyber-based communication was less common than it is now. For example, Pew Research Center (Lenhart, 2015) surveyed 1060 teenagers between September 2014 and March 2015. Seventy-one percent of this sample reported using more than one social network site, Facebook being the most popular. Further, 88 % of the sample reported having access to a cell phone or Smartphone, and 90 % of those teens reported using text messaging. We have already reviewed research demonstrating that individuals can experience ostracism over each of these media. As such, ostracism in cyber interactions may be more common now because there are more opportunities than before. Additionally, 57 % of the Pew Research sample reported their social networks overlapped across various sites; if ostracism occurs in one site, it likely carries over to the other sites. Ostracism may be easier in asynchronous cyber interactions than in face-to-face interactions because the ostracizer does not have to see the direct effect on the recipient. To our knowledge, no systematic research has investigated this possibility. However, a recent article in *The New York Times* discussed how popular culture has embraced a term called *ghosting*, which refers to when someone ends a relationship by ceasing contact and ignoring the person's attempts to communicate, both in person and through electronic media (e.g., ignoring calls, text messages, and social networking messages; Safronova, 2015). This term may simply be a modern update of the *silent treatment* or the *cold shoulder*, colloquial terms for ostracism typically discussed in the context of close interpersonal relationships (Williams, 2001). Safronova (2015) noted that it is unclear if the preponderance of e-based social interactions have made ghosting more common than before, but some of the interviewees suggested that ignoring someone was an easier way for them to end a relationship than directly rejecting their partner because then they did not have to physically see their partners' emotional reactions. Further, Safronova (2015) offered an intriguing possibility—from the target's perspective being ghosted over online social media may be worse than in face-to-face or over the phone/text messaging because one can continue to see their former partner have fun without them (and potentially start new romantic relationships) via tweets and other types of public posts. These ideas are all speculation based on a few anecdotes, but are still empirical questions that future researchers could investigate.

Feeling Ostracized When Not Directly Being Ignored

Williams (2009) has argued that the aspect that sets ostracism apart from the other types of social exclusion is the experience of being ignored. Williams (2001) provided several examples from qualitative interviews with individuals who indicated they had experienced ostracism (aka. "the silent treatment") for an extended period of time in their everyday lives. Many of these participants indicated the feeling of

being ignored was particularly hurtful; they described it as making them feel "meaningless" or like they were "dead or a ghost," or they were in a "silent hell." Other individuals said they would have preferred verbal or physical abuse over being ignored because at least that type of treatment would have been acknowledgment, suggesting they were at least worth "getting mad at." Williams (2001) further argued that while being rejected commonly threatens one's need for belonging and self-esteem (Baumeister & Leary, 1995; Leary, 1999), being ignored may be important for understanding why ostracism typically threatens individuals' needs for control and meaningful existence. Empirically, Molden, Lucas, Gardner, Dean, and Knowles (2009) demonstrated that short-term experiences of being ignored (passively excluded) versus being rejected (actively excluded) can lead to more promotion focused-behaviors focused on reestablishing social connections. These data suggest both theoretical and empirical importance to emphasizing the "ignoring" distinction when comparing ostracism to other forms of social exclusion.

However, there are rejection-based experiences that do not involve directly ignoring someone but they still share similar outcomes with ostracism. Klages and Wirth (2014) demonstrated that being laughed at in a way that makes one feel excluded elicited feelings of being *both* excluded and ignored, even though being laughed at is not objectively being ignored (it is more akin to rejection). Wirth et al. (2015) found that when participants received information that their fellow group members rated them poorly on a liking measure, they reported feeling both "ignored" and "excluded," as well as the typical need threat effects exhibited in other ostracism research. However, participants had not been directly ignored by their group members and anticipated interacting in a future group task with these members. There are also situations that ambiguously involve elements of both rejection and ostracism. King and Geise (2011) found that when someone is told he or she has been forgotten, this person both feels excluded and experiences a threat to their meaningful existence, and they argue that this experience is akin to oblivious ostracism (i.e., feeling ostracized because one is simply not worth being acknowledged by others; Williams, 2009). However, the manipulation involved the "forgetter" explicitly telling the participant they had been forgotten so technically the participant had not been ignored. Each of these examples demonstrate that different types of social exclusion share similar psychological outcomes with ostracism, specifically feelings of being ignored and threats to meaningful existence, even if they are not conceptually and operationally analogous to other ostracism manipulations (see Williams, 2009, and chapter "Methods for Investigating Social Exclusion" for a review of the basic paradigms).

Williams (2001) argues that individuals can feel ostracized even if they perceive it erroneously; indeed, this hyper-sensitivity may be useful from an evolutionary perspective (Williams, 2009). Leary (1990) also focused on the importance of an individual's perceptions of being socially excluded in understanding what elicits negative psychological outcomes. As such, it is possible that subjectively feeling ostracized (i.e., feeling both ignored and excluded), as well as experiencing lowered basic need satisfaction, may occur in each type of social exclusion even if the experience does not directly involve being ignored. We conducted an exploratory study to investigate this possibility (Wesselmann, Grzybowski, et al., 2015). We adapted an autobiographical

recall paradigm typically used to study "rejection" (Pickett, Gardner, & Knowles, 2004). In each condition, participants recalled and wrote about a time when they experienced a particular social event: *ostracism* (being ignored and excluded), *exclusion* (purposely kept apart from someone), *rejection* (told explicitly by someone that they were not wanted), *discrimination* (treated differently based on social categories), *being forgotten* (someone forgot their name), *social inclusion*, and a *nonsocial control* (eating breakfast by oneself). We provided participants the specific definitions for rejection, exclusion, and ostracism defined by Williams (2007) and the definition for discrimination given by Whitley and Kite (2010). Even though exclusion is generally considered the broader label to encapsulate the other four types of exclusion, we were unsure if laypersons make the same distinction. As such, we provided the specific definition and designed it as a separate condition. We also included the "forgotten name" condition to approximate the research on how being forgotten can elicit feelings similar to other forms of social exclusion (King & Geise, 2011).

We examined if participants recalled experiencing aversive effects typical to ostracism research (e.g., basic need threat, pain; Williams, 2009) differently between these various conditions. Overall, four of the social exclusion conditions (i.e., ostracism, rejection, exclusion, and discrimination) were not significantly different from one another on most dependent variables, but participants in these conditions all recalled greater feelings of being ignored, excluded, greater pain, and less need satisfaction than participants in the inclusion, control, and forgotten name conditions. When comparing the inclusion, control, and forgotten name conditions, included participants recalled feeling significantly less ostracized during the event compared to participants in the forgotten name condition; included participants did not differ from participants in the control condition. Included participants also recalled higher need satisfaction than both the control and forgotten name conditions. Thus, our results generally support the idea that four social exclusion types (i.e., discrimination, exclusion, ostracism, and rejection) threaten basic need satisfaction and make targets subjectively feel more ostracized (i.e., ignored and excluded), even when they were not explicitly asked to recall an episode that involves being ignored.

Directions for Future Research on Social Exclusion

Further Theoretical Integration of Exclusion Types

We have argued that one way to reframe the conceptual and empirical overlaps between different types of social exclusion is that these experiences elicit subjective feelings of being ostracized (i.e., ignored and excluded) even if the experience does not involve being directly ignored. We provided preliminary evidence to support this hypothesis. In addition to conducting more systematic tests comparing these types of social exclusions together, researchers should consider studying other constructs that may be considered types of social exclusion (e.g., bullying, unrequited love; Richman & Leary, 2009). Researchers could combine experimental in-vivo manipulations of

each of these exclusion types with naturalistic observation sampling methods such as the event-contingent diary method (Nezlek et al., 2012) or the Electronically Activated Recorder (EAR; Mehl, Pennebaker, Crow, Dabbs, & Price, 2001). These naturalistic sampling methods would afford researchers the opportunity to measure both the frequency of various exclusion types (either direct or subtle everyday instances) as well as compare their frequency and psychological effects.

Exclusion and Psychological Mechanisms

Future researchers should also examine if these subjective feelings of ostracism mediate the effects of the social exclusion manipulations on the myriad negative psychological outcomes commonly observed in this research area. Researchers could also directly assess participants' perceptions of relational devaluation and investigate (a) if devaluation precedes subjective feelings of ostracism, (b) is the reverse true, or (c) are these two perceptions separate mediators that each contribute uniquely to the exclusion-negative outcomes relation (Gerber & Wheeler, 2014). Further, research suggests that feelings of being ignored, excluded, and basic need threat may be inherent to experiencing pain generally, whether it be social or physical in nature (Riva, Wesselmann, Wirth, Carter-Sowell, & Williams, 2014; Riva, Wirth, & Williams, 2011). Indeed, feelings of devaluation, ostracism, and basic need threat may each be downstream effects of a general pain-based reaction to any type of threat (Jonas et al., 2014).

Exclusion and Emotional Responses

Finally, researchers should examine the effects of various types of social exclusion on emotions. Extant research on the emotional effects of exclusion shows mixed results, sometimes finding effects and other times not (Blackhart et al., 2009; Gerber & Wheeler, 2009), which may be a result of conceptual and methodological differences between types of exclusion (Bernstein & Claypool, 2012). Regardless, many types of exclusion may cause negative emotional effects (Leary, Springer, Negel, Ansell, & Evans, 1998; Williams, 2009). Some researchers have focused on exclusion's effects on specific negative emotions, such as anger and sadness (Chow, Tiedens, & Govan, 2008) or self-relevant emotions such as humiliation and shame (Dickerson, 2011). Researchers argue that these self-relevant emotions are evoked when one's self-concept is threatened or devalued either by interpersonal exclusion (Dickerson, 2011; Lindner, 2009; Richman & Leary, 2009; Tangney, 2003) or by being affiliated with a stigmatized social category (Lindner, Hartling, & Spalthoff, 2011; Reyles, 2007).

Humiliation specifically is linked to outcomes commonly caused by social exclusion manipulations (e.g., low self-esteem, depression, and dehumanization; Bastian & Haslam, 2010; Williams, 2009), and established measures of humilia-

tion involve items directly assessing feelings of exclusion or invisibility (Hartling & Luchetta, 1999). Although both humiliation and shame often co-occur, they have important conceptual differences that may have important implications for how individuals respond to a social exclusion event. Both emotions involve a threat to someone's self-concept, but whereas shame is often a negative global evaluation of the self (Tangney, 2003; Weiner, 2006), individuals who experience humiliation typically believe they do not deserve the treatment (Hartling & Luchetta, 1999). Attributions of responsibility and fairness influence feelings of anger in various types of moral judgments (Weiner, 2006), which in the context of exclusion-based anger may influence aggressive responses (e.g., Chow et al., 2008). Researchers have theorized that chronic feelings of both humiliation and exclusion may influence individuals or groups to engage in extreme violence such as mass shootings or terrorism (Hartling, 2007; Hartling, Lindner, Spalthoff, & Britton, 2013; Knapton, 2014; Leary, Kowalski, Smith, & Phillips, 2003; Wesselmann, Ren, & Williams, 2015). However, chronic humiliation and exclusion may also motivate individuals to resign themselves to their fate and withdraw socially, possibly feeling alienated and helpless to avoid future exclusion (Hartling & Luchetta, 1999; Ren, Wesselmann, & Williams, 2015; Williams, 2009). Weiner (2006) offers a potential way for resolving this paradox; feelings of shame are associated with negative global evaluations and withdrawal behaviors. Given that shame and humiliation both occur during initial reactions to social exclusion (Dickerson, 2011), reflective attributions of responsibility and fairness may facilitate aggressive responses if individuals believe the treatment is unwarranted (humiliation-focused), or withdrawal responses if the treatment was deserved (shame-focused).

Conclusion

Social exclusion occurs in myriad forms and is common in human social life. Despite its commonality, social exclusion is aversive and can lead to many physical and psychological problems, especially when experienced chronically (Williams, 2009). Scholars from various academic disciplines have provided a wealth of theory and research on these topics; however, there are more exciting questions to be investigated. In this chapter, we create a preliminary framework for understanding the overlap between different types of social exclusion and their negative psychological outcomes. Further, we provide some potential future directions for understanding "when," "why," and "how" these types of experiences overlap. We hope our ideas generate enthusiasm for future research on these issues. We also encourage scholars from various disciplines to develop and test their own theoretical frameworks for integrating the diverse array of social exclusion individuals experience in their daily lives and how to redress these harmful experiences, including prevention, in various social settings (e.g., schools, workplace).

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Methods for Investigating Social Exclusion

James H. Wirth

When it is time to select a social exclusion research paradigm to begin a novel line of research, researchers might experience the tyranny of choice—there are too many paradigms to choose from. Research on social exclusion, which is defined broadly as the experience of being kept apart from others physically (e.g., social isolation) or emotionally (e.g., being ignored or told one is not wanted; see chapter "The Many Faces of Social Exclusion"), is a rich field of social psychology that utilizes numerous research paradigms. This chapter on methods for investigating social exclusion is designed to sort through all of choices to help novice and established social exclusion researchers determine the best paradigm for their research question. To help determine the best research paradigm for you to implement, I provide a decision making tree (see Fig. 1) which leads you through the chapter to a description of your selected paradigm. The decision making tree is designed to organize the social exclusion paradigms as best as possible. You can begin using the decision making tree by choosing whether your research could be undertaken by participants interacting with computer avatars, participants interacting with other individuals, or by participants completing written material manipulations. I help you begin the decision making process by providing a brief discussion of each category of the social exclusion paradigms and, as part of the discussion, I provide some examples of specific paradigms that fall into each category. Making this first choice between the broad categories of social exclusion paradigms will determine the initial path your research can take.

Once you decided what category of paradigms you are interested in, you can then find in-depth descriptions of the paradigms that fall within the category you selected. For each of the specific social exclusion paradigms, I provide a background about

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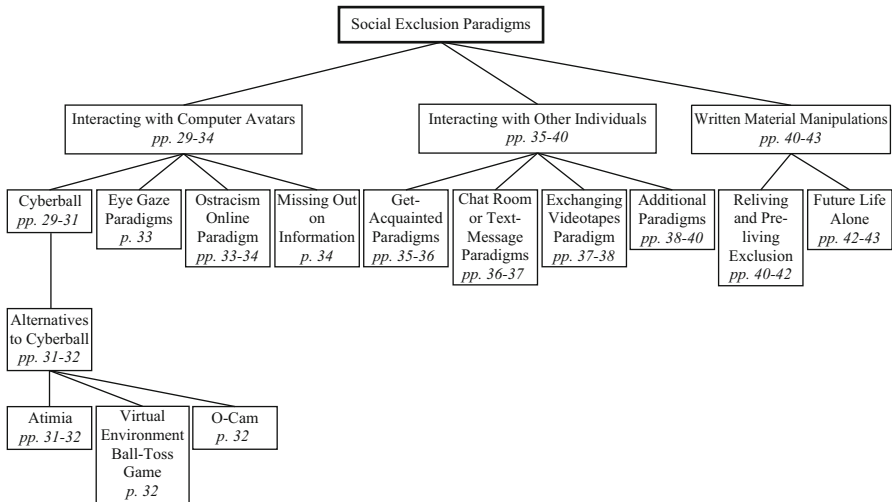
Fig. 1 Social exclusion paradigms decision making tree

the paradigm, details on how the paradigm works, discuss its potential strengths and weaknesses, and when the paradigm might work best. Let us get started with making the first decision: What category of social exclusion manipulation seems like it could work best for your research?

Categories of Social Exclusion Paradigms

Interacting with Computer Avatars

Social exclusion researchers developed a number of paradigms in which the social exclusion manipulation (e.g., ostracizing) is delivered by interacting with computer avatars; unbeknownst to participants who are told their group members are other individuals. The most common social exclusion paradigm involving computer avatars is a virtual ball-toss game called Cyberball (Williams, Cheung, & Choi, 2000). In Cyberball, participants are always included or, at some point, they are ostracized when they stop receiving the ball. Researchers conducted studies using Cyberball with over 5000 participants (Williams & Nida, 2011). Including the results from many of these participants, a recent meta-analysis by Hartgerink, van Besst, Wicherts, and Williams (2015) examined the effect size of several factors researchers studied previously as moderators of ostracism's effects (e.g., number of players, ostracism duration, gender, age) and found ostracism's effects generalized across many individual difference and situational factors. As an alternative to Cyberball, researchers developed several group social exclusion paradigms that include taking

turns solving word association items (Atimia; Wirth, Turchan, Zimmerman, & Bernstein, 2014), playing a virtual environment version of a ball-toss game (Kassner, Wesselmann, Law, Williams 2012), or having exchanges over video conferencing (i.e., The O-Cam; Goodacre & Zadro, 2010). Interactions where computer avatars administer the manipulations also include failing to receive eye contact from an avatar (e.g., Wirth, Sacco, Hugenberg, & Williams, 2010), participants receiving less "likes" than other group members (Wolf et al., 2014), or participants missing out on information they believe others know, but are not sharing (e.g., Jones, Carter-Sowell, Kelly, & Williams, 2009; Jones & Kelly, 2010). I discuss these paradigms utilizing computer avatars on page 29.

Interacting with Other Individuals

Social exclusion paradigms that involve interacting with others often include an experimenter, a confederate (an individual acting out a role on behalf of the researcher), a group of confederates, or a group of participants working to create a specific situation; in this case, socially excluding a participant. For instance, participants engage with several others (sometimes confederates, see Wesselmann, Butler, Williams, & Pickett, 2010) in a get-acquainted paradigm (e.g., Leary, Tambor, Terdal, & Downs, 1995; Nezlek, Kowalski, Leary, Blevins, & Holgate, 1997; Twenge, Baumeister, Tice, & Stucke, 2001) where all the group members share basic information about themselves (e.g., hometown, major). In these studies, after the group interaction, participants are then randomly assigned to receive false feedback that no one wants to work with them. Alternatively, researchers can be the ones to administer the exclusion manipulations during an interaction where the group is getting to know each another. For instance, researchers can control a get-acquainted conversation in a chat room (Williams et al., 2002) or when sending text-messages (Smith & Williams, 2004).

On an individual participant basis, researchers (e.g., Maner, DeWall, Baumeister, & Schaller, 2007) developed a variation of the get-acquainted paradigm where video-tapes are used to communicate basic information about oneself between a participant and a supposed partner. As part of this ruse, the participant ends up being rejected by the partner. Lastly, there are additional examples of interpersonal exclusion paradigms that involve role-playing (e.g., Zadro, Williams, & Richardson, 2005). I begin discussing paradigms that involve interacting with other individuals on page 35.

Written Material Manipulations

Written material manipulations involve participants writing about a social exclusion experience. Typically, researchers simply ask participants to recall a time they were excluded, which is sufficient to make individuals feel excluded (e.g., Chen, Williams, Fitness, & Newton, 2008). Researchers have also asked participants to

imagine being excluded in the future (Chen & Williams, 2012) or to imagine specific social exclusion scenarios (e.g., Aydin, Fischer, & Frey, 2010; Hitlan, Kelly, Schepman, Schneider, & Zárate, 2006). Other written manipulations have individuals complete a measure of personality and then participants receive false feedback insinuating that, even though they might currently have friends, in the future they will live their life alone, resulting in participants feeling rejected (e.g., Twenge, Catanese, & Baumeister, 2002). I describe these types of manipulations involving written materials on page 40.

Considerations When Choosing a Category of Social Exclusion Paradigms

Creating the decision making tree using this categorical approach of interactions with computer avatars, interactions with other individuals, and written material manipulations is a practical approach for sorting through which paradigm might be ideal for your research. However, choosing a paradigm is also highly dependent on your research goals. The first choice of category or specific paradigm may depend on whether you are investigating ostracism (primarily characterized by being ignored), rejection (defined as direct negative attention suggesting that one is not wanted; see chapter "Social Exclusion in Everyday Life"), or another type of social exclusion (e.g., anticipated loneliness). Relating these different types of social exclusion to the categories of social exclusion paradigms, ostracism paradigms are generally in the category of interactions with computer avatars and rejection paradigms are likely found in the category of interactions with other individuals. The category of written material manipulations includes tasks involving ostracism, rejection, and other types of social exclusion (e.g., anticipated loneliness).

Alternative Considerations

Some considerations for what paradigm to choose may be more pragmatic. Each of the categories of paradigms requires different amount of resources. If you have limited resources, the written material manipulations of exclusion might work best, but if you have unlimited resources (e.g., an ability to run many participants), then a paradigm involving interactions with other individuals may be the most beneficial. If you have a short time line for getting your study completed, the paradigms involving interactions with computer avatars or written material manipulations may be the most efficient. If you are replicating previous research, you might simply utilize the same paradigm or a paradigm within the same category of manipulations. Conversely, if you are trying to extend your findings, you might try a paradigm in a different category of manipulations than the category of your current paradigm. These considerations are alternative means for deciding which paradigms to utilize, or at least other factors to consider while you choose which category of social exclusion manipulations you will explore.

Descriptions of Social Exclusion Paradigms

At this stage, hopefully you have a firmer answer to the question: What category of social exclusion paradigms seems like it could work best for your research? If this is the case, then below you can find additional information for each category. In the following portion of the chapter, I break down each of the categories described above into the paradigms that are characteristic of each category. It is here where I provide the details about the paradigms, such as their background, how the paradigms are used, their positive and negative characteristics, and when each paradigm might be used best. In this second phase of decision making, hopefully you will be able to answer the more specific question: What social exclusion paradigm would work best for your research?

Descriptions of paradigms involving interacting with computer avatars are immediately below. Descriptions of paradigms utilizing interacting with other individuals begin on page 35 and written material manipulations of social exclusion begin on page 40. In fairness, it is important to note that not all social exclusion paradigms, references for each use of the paradigms, and ways of modifying the paradigms could be included in this chapter.

Interacting with Computer Avatars

In this section, I introduce you to the specifics of commonly used social exclusion manipulations delivered through interacting with computer avatars. These manipulations include Cyberball, manipulations inspired by Cyberball (e.g., O-Cam), eye gaze paradigms, Ostracism Online, and missing out on information (i.e., exclusion caused by missing out on information that others know).

Cyberball

When Williams et al. (2000) developed Cyberball, they began with a basic game and the approach has remained relatively the same since the beginning. Participants logged into an online experiment where they tossed a virtual ball (or originally a virtual Frisbee) with two others they believed were also online, but were instead computer controlled agents. Before beginning the game, participants were told Cyberball was designed to help them practice their mental visualization skills and participants were asked to mentally visualize the whole scenario (e.g., what the other people are like, where they are playing, and even the weather). These visualization instructions were designed to distract participants from focusing on their ball-toss performance. Following the instructions, participants tossed the ball with the other players and Williams and colleagues manipulated how often participants received the ball or Frisbee—either only initially at the beginning and then never again (ostracizing the participant) or throughout the game (including the

participant). This simple manipulation produced strong results, with effect size estimates on measures of mood and fundamental needs (e.g., belonging) often ranging from 1.0 to 2.0 (Williams & Jarvis, 2006).

The computer-based version of Cyberball offers many different options that researchers can program to create a variety of scenarios (see Williams & Jarvis, 2006). Researchers can have participants play with two or three other computer-controlled avatars. Researchers can also control who the ball is thrown to (including never throwing to the participant), how many throws the game lasts (typically it is 30 total tosses), and how long the computer-controlled avatars take before throwing the ball (e.g., Wesselmann, Wirth, Pryor, Reeder, & Williams, 2013). Researchers can also manipulate the computer-controlled avatars by changing the text labels for the players (potentially giving the agents names) and the pictures (or icons) that represent each of the players. Each variable is controlled by a settings file (see Williams & Jarvis, 2006, http://www3.psych.purdue.edu/~willia55/Announce/cyberball.htm, or http://www.empirisoft.com/cyberball.aspx, for more details on how to download and program Cyberball). Lastly, for each throw, Cyberball records who the ball was thrown to and how long it took to make the throw, which converts Cyberball into a dependent measure of toss behavior (e.g., Wesselmann et al., 2013).

Researchers have been highly creative in their implementation of Cyberball features. For instance, Gonsalkorale and Williams (2007) manipulated the group memberships of the Cyberball players by changing the icons next to each player in order to see if participants would feel bad being ostracized by a despised out-group (i.e., members of the KKK). Similarly, Wirth and Williams (2009) manipulated the "Cyberplayer" images to be either different colors (a temporary characteristic) or a different gender (a permanent characteristic) than the participant. Schoel, Eck, and Greifeneder (2014) manipulated Cyberball players by positioning the participant above the excluding players, rather than the traditional position of below, creating differences in implied power.

To examine if there is a scenario in which participants might feel better not receiving the ball, van Beest and colleagues created several Cyberball games. van Beest and Williams (2006) created the game €yberball (pronounced Euroball) in which included participants lost money and being ostracized meant keeping the money (ostracism was advantageous). A recent follow-up study paid participants each time they did not receive the ball (Lelieveld, Moor, Crone, Karremans, & van Beest, 2013). In a similar variation of game play, van Beest, Williams, and van Dijk (2011) created Cyberbomb by replacing the Cyberball with a bomb that participants believed could go off at any minute and end the participant's Cyberball game prematurely. Lastly, De Waal-Andrews and van Beest (2012) created Claimball in which participants were told to "claim" the ball by being the first to click on the figure of the player who had the ball. In all these examples, researchers tried to reduce ostracism's aversive effects.

Considerations for Using Cyberball. Cyberball is a mainstay of ostracism research. Demonstrating its utility, Cyberball has been used in close to 200 publications throughout the world (for an up-to-date list, see http://www1.psych.purdue.

edu/~willia55/Announce/Cyberball_Articles.htm; Hartgerink et al., 2015; Williams & Nida, 2011). It is a simple manipulation that can be administered to many participants at once. It is easy to program and to modify the paradigm for the researcher's needs. As evidenced by multiple researchers finding a similar pattern of results, Cyberball (at least as a manipulation of ostracism) can be administered in a consistent fashion. Further, it has two important strengths for researchers: (1) it does not require many participants to find an effect on measures of basic need satisfaction (e.g., self-esteem) and negative affect (approximately 3 participants per condition; Williams & Jarvis, 2006); (2) Cyberball is also high in internal validity—researchers can feel confident that their results are caused by the game and not other outside factors.

However, before a researcher commits to using Cyberball, there are some limitations to consider. First, the external validity of Cyberball can be questioned. Cyberball is based on a real life experience—Kip Williams had being excluded in a Frisbee-toss game—suggesting Cyberball has external validity. Further, when researchers compared online ostracism to in-person ostracism, they found minimal differences, which suggest online paradigms such as Cyberball produce the same effects resulting from in-person interactions (Filipkowski & Smyth, 2012). However, being ostracized from a ball-toss game is a specific ostracism experience and it may not generalize well to other ostracism experiences. Additionally, participants may not be likely to believe they are actually playing with others, although in some contexts this may not matter as participants still feel ostracized when they know the players are computer-controlled (Zadro, Williams, & Richardson, 2004). Ultimately, Cyberball is an ideal paradigm when you have relatively minimal resources (Cyberball requires only a basic computer), want to establish a basic effect, or are focused on studying an ostracism effect and you want to be able to compare your results to a wide body of ostracism literature.

Alternatives to Cyberball.   As a means of generalizing ostracism effects, researchers developed several paradigms in which a participant interacts with others, who are actually computer-controlled players. I discuss three newly developed alternatives to Cyberball: Atimia, a virtual environment ball-toss game, and the O-Cam.

Atimia.   One limitation to using Cyberball is that there is a restriction on the number of similar ostracism group-based interaction paradigms that can be used to replicate ostracism effects. To address this concern, Wirth et al. (2014) developed a game called Atimia. In Atimia, participants take turns with computer avatars solving Remote Associates Test (RAT) items (Bowden & Jung-Beeman, 2003). Each trial involves the participant (or computer avatar) receiving three words and trying to find a fourth word that is related to the three other disparate words (e.g., "play," "fold," and "duck" are all related to the fourth word of "bill," i.e., playbill, billfold, duckbill). To replicate ostracism effects, the researchers (Wirth et al., 2014) manipulated how often participants were selected to complete the RAT trials, either about a third of the time throughout the game or once by each of the players at the beginning and then they were not selected again. They also varied an additional factor

specific to Atimia, the performance of participants relative to the group. In the first use of Atimia, participants played with a burdensome group, one who thwarts achieving a group goal. Atimia could also be used to make the participant's performance to the group burdensome—potentially providing a reason for why the participant was ostracized. This alternative paradigm, in conjunction with other group-based social exclusion paradigms that incorporate interacting with computer avatars, expands the opportunities for researchers to establish ostracism effects and replicate them using virtual group interactions.

Virtual Environment Ball-Toss Game. As a variation of a Cyberball interaction, Kassner et al. (2012) created a virtual environment ball-toss game in which ostracism could be manipulated in a way that emulated previously validated ostracism paradigms (including using the mental visualization instructions). Using virtual reality equipment, participants tossed a ball to other full-figured, life-like avatars. Ostracized participants received no ball tosses while included participants received the ball 30 % of the time. Despite its virtual nature, Kassner et al. (2012) demonstrated stronger effects than a face-to-face paradigm (Warburton, Williams, & Cairns, 2006) and similar effects to Cyberball (Williams et al., 2002) or an online chat room paradigm (Smith & Williams, 2004).

The O-Cam. As a last alternative to Cyberball, Goodacre, and Zadro (2010) developed the O-Cam to incorporate elements of a face-to-face interaction that is confederate-free, highly controlled, and does not require participants role-playing. The O-Cam entails a simulated Web conference where participants give a speech about themselves during which they are either attended to by the two prerecorded confederates, the confederates smile and appear to look at the participant, or the confederates attend to the participant for 15 s before the confederates begin speaking with each other and completely ignore the participant. Each of these alternatives to Cyberball produced strong exclusion effects and can be modified easily to investigate new ideas.

Considerations for Using Alternatives to Cyberball. Utilizing any of these Cyberball alternatives allows researchers to have some of the strengths of Cyberball, but these paradigms also have their limitations. The paradigms I discuss produced ostracism effects that were similar to those produced by Cyberball and the paradigms can be consistently administered. Each paradigm has strong internal validity, in large part due to the controlled nature in which the avatars deliver the manipulation in a consistent fashion. However, similar to Cyberball, research is still exploring their external validity. Kassner et al. (2012) tried to address Cyberball's external validity concerns by having participants play the ball-toss game in a virtual environment. Additionally, for the O-cam, the experimenter needs to be trained to respond at various points to the prerecorded confederates in order to make it appear that the interaction is genuine. The ideal situation for using these paradigms may be to replicate previous ostracism effects (potentially Cyberball effects) or to study moderators of ostracism's immediate and delayed effects, such as facial expression, mannerisms, or context.

Eye Gaze Paradigms

Social exclusion paradigms are not limited to ostensibly playing games with computer-controlled avatars. Rather, there are multiple exclusion paradigms involving participants engaging with various forms of avatars. For instance, Wirth et al. (2010) had participants mentally visualize interacting with another person, similar to the instructions for Cyberball. Participants viewed a brief (2.5-min) movie of a human face on a computer screen that either directed its eye gaze at the participant or averted eye gaze from the participant by looking left or right following a brief initial period of direct eye gaze. This paradigm successfully induced feelings of ostracism and its sequela. In addition to manipulating eye gaze, researchers (Lamar, Reeves, & Weisbuch, 2015) added angry, happy, or neutral facial expressions. Böckler, Hömke, and Sebanz (2014) developed an eye-tracker-based "looking game" where participants make eye contact with two virtual partners. Participants were instructed that the player who had just been looked at by the others could then choose whom to look at next. Ostracism was manipulated by the number of looks the virtual partners gave to the participant. In these studies, researchers manipulated ostracism through eye gaze, but researchers have established several other ways to manipulate ostracism through interactions with computer avatars.

Considerations for Using Eye Gaze Paradigms. In the case of interacting with an avatar averting its eye gaze (Wirth et al., 2010), this is a faux interaction with minimal threat. However, researchers (Wesselmann, Cardoso, Slater, & Williams, 2012) established external validity for the paradigm by showing that failing to receive eye contact from an individual passing by (a confederate in the experiment) was sufficient to cause lowered feelings of belonging.

Ostracism Online Paradigm

As a third example of a social exclusion paradigm involving interacting with computer avatars, researchers can now utilize a social media ostracism paradigm called Ostracism Online (Wolf et al., 2014). In this paradigm, participants were told they would work on a group task with others they would connect with online; the others were actually computer-controlled avatars. Participants then went to a webpage where they entered their initials, name or nickname, selected 1 of 82 avatars, and then wrote a paragraph introducing themselves to the group. Participants shared their profile with the group and were then given 3 min to read the profiles of the other group members, which were preprogrammed and designed to be diverse in age, gender, and race. Across these 3 min, participants could press a "like" button after reading a group member's description and, conversely, participants believed the other group members could like the participant's profile, which was also displayed. The researchers made participants feel ostracized by causing them to have less "likes" than their fellow group members at the end of the 3 min. The authors (Wolf et al., 2014) designed the paradigm to create a social interaction that could be

used to manipulate several aspects of the social situation, to be used for online data collection, to study group-based behavior, and to be ecologically valid.

Considerations for Using the Ostracism Online Paradigm. Demonstrating its effectiveness, the Ostracism Online paradigm produced equal, if not slightly stronger, effects than Cyberball, which makes it a good alternative to Cyberball. Ostracism Online may be especially beneficial in populations that may already be familiar with Cyberball (e.g., university students). The Ostracism Online (Wolf et al., 2014) paradigm may have the greatest external validity as the paradigm replicates the behaviors that are typical of the over one billion users on Facebook. Wolf et al. (2014) made their paradigm easily accessible online and the authors have given others access to the paradigm (http://smpo.github.io/socialmedia/).

Missing Out on Information (Being Out of the Loop)

Another form of ostracism that researchers investigated is when an individual is missing out on information. Jones and Kelly (2010) labeled this form of ostracism as "being out of the loop," which is operationally defined as "where a person comes to realize that he or she is unaware of information that other people know" (p. 186). To set up a scenario where individuals could feel out of the loop, Jones and collaborators (Jones et al., 2009; Jones & Kelly, 2010) developed a *Clue* game. Researchers brought participants into the lab in groups ranging from one to four and told the participants they would be engaged in several tasks with their group members (who were in fact computer-simulated). To establish a sense of being in a group, the computer-simulated players and the participant selected questions that everyone in the group would answer and participants could see the group members' responses. Participants then played the Clue game during which the group was tasked with solving three aspects of a crime: the location, weapon, and suspect. Each category had six possibilities and participants were asked to memorize the location, weapon, and suspects. Participants were then told that they would go through three rounds of receiving clues, with each round related to one of the aspects of the crime they had to solve. Before the first round, participants allocated from zero to four clues (4 was the maximum number) to each of the other computer-simulated group members. To manipulate "loop status," in-the-loop participants received four clues, similar to the participants' group members, but out-of-the-loop participants received only two clues, while each of the participants' group members received four.

Considerations for Using a Missing Out on Information (Being Out of the Loop) Paradigm. Through this paradigm, researchers can investigate the consequences of being out of the loop as well as partial ostracism—being ignored and excluded some of the time (Jones et al., 2009; Williams et al., 2000). Despite the engaging nature of the Clue game, Jones and Kelly (2010) acknowledge a key limitation: the out-of-the-loop situations were relatively minor compared to those in everyday life and occurred with a temporary group. However, these paradigms are well-designed for investigating the out-of-the-loop phenomenon.

Interacting with Other Individuals

For this category of social exclusion manipulations, I provide the details for several paradigms that involve delivering the manipulation of social exclusion through interacting with other individuals. These paradigms include: (1) rejection from a group get-acquainted interaction, (2) rejection occurring during a chat room or text-message conversation, (3) rejection during an interaction carried on through exchanging videotapes, and (4) other additional paradigms. In some cases, you will see how researchers modified the paradigms so that a computer could administer the manipulation, rather than individuals.

Get-Acquainted Paradigms

A previously employed in-person manipulation used by rejection researchers involved working with a group of participants or a number of confederates to make individuals feel rejected. In a classic get-acquainted paradigm developed by Twenge et al. (2001; see also Leary et al., 1995; Nezlek et al., 1997), participants arrived at the lab in a single-sex group ranging from four to six people. Each person wrote their first name on a nametag and learned their group members' names. Participants then engaged in a get-acquainted task developed by Sedikides, Campbell, Reeder, and Elliot (1999), in which the group, for 15 min, discussed questions that were designed to help the group members get to know more about each other. After completing the group discussion, the experimenters told the participants, "We are interested in forming groups in which the members like and respect each other. Below, please name the two people (out of those you met today) you would most like to work with." Then, using a procedure adapted from previous research (i.e., Leary et al., 1995; Nezlek et al., 1997), participants were randomly assigned to receive feedback indicating they were accepted or rejected by the group. Specifically, accepted participants were told, "I have good news for you—everyone chose you as someone they'd like to work with," while rejected participants were told, "I hate to tell you this, but no one chose you as someone they wanted to work with," (Twenge et al., 2001, p. 1063). All participants in the group then went on to do a task with a new person, rather than someone in the group. The get-acquainted task can be done in-person, as described above, or through an exchange of written information (Leary et al., 1995).

Wesselmann and coauthors (2010) adapted the get-acquainted paradigm by incorporating indications of rejection into the get-acquainted portion of the experiment, which is in contrast to a group of participants focused only on getting to know each other (e.g., Twenge et al., 2001). Participants joined three or four confederates posing as participants in the experiment waiting area. Similar to participants in the Twenge et al. (2001) study, everyone answered a few preliminary questions to getting to know more about each other. However, what made the Wesselmann et al. (2010) study different was that the confederates acted friendly or unfriendly during

the get-to-know-you portion of the experiment. In the friendly condition, "confederates treated the participant cordially. Every member of the group was given equal attention by the confederates, and each response was reacted to positively," while for those in the unfriendly condition, "confederates treated each other cordially and treated the participant in a cold and indifferent manner. Each response made by a confederate was received positively by the other confederates. Any response or attempt participants made to contribute to the discussion was met with indifference and disinterest by the confederates" (p. 234). This modification established an alternative way to reject others that may closely resemble the experience individuals may have if they are disliked during a group interaction.

Considerations for Using Get-Acquainted Paradigms. The get-acquainted paradigms described above are generally externally valid manipulations of rejection as they closely mimic everyday experiences, but they are also some of the more difficult rejection paradigms to administer. These tasks involve active engagement with others in a context many of us have found ourselves in—learning about new group members. While these manipulations have external validity, these paradigms do make a tradeoff resulting in lower internal validity. It is difficult, especially in the case of Wesselmann et al. (2010), to make sure the manipulations are consistently administered in the way the researcher intended and that no other factors could account for the potential results (e.g., confederates guessing the hypothesis). Addressing these issues involves careful training. Additionally, get-acquainted paradigms may be limited because only one person can be run at a time (e.g., Wesselmann et al., 2010) or a substantial number of participants (4–6) may need to be in the lab at the same time (e.g., Twenge et al., 2001). Wirth, Bernstein, Wesselmann, and LeRoy (2015) addressed limitations of in-person get-acquainted paradigms by creating an online get-acquainted task. In Study 1, participants completed several questions about themselves, which were ostensibly shared with others. Participants then read the computer avatars' responses and rated how much they liked each group member before finding out if the group liked or disliked the participants through either receiving an average score of 8 or 3 from the group (1 = *not at all*; 10 = *a great deal*). For a related manipulation using personality profiles see Pfundmair, DeWall, et al. (2015). Ultimately, get-acquainted paradigms may be used optimally for replicating and extending rejection effects, as they are a strong method for generalizing effects.

Chat Room or Text-Message Paradigms

Chat rooms and text-messaging are common means of socially interacting with others and, as such, they represent possible venues where social exclusion could occur. In a chat room paradigm, Williams et al. (2002) asked participants to engage in a discussion about their thoughts and experiences during their first year at a university. After 4 min of the two confederate discussants engaging the participant in conversation, the participant was randomly assigned to continue to be engaged in

conversation by the confederates or ignored by the confederates for the remaining 5 min of the interaction. To ignore the participant, confederates followed a predetermined dialogue and ignored any comments made by the ostracized participant.

In a text-messaging paradigm, Smith and Williams (2004) applied a similar approach to the chat room, but this time through text-messaging. Participants text-messaged with two other confederates in the same room and they began the group-texting by answering two questions that provided a bit of information about themselves. Following these questions, for the remainder of the 8-min interaction the confederates either included the participant by being responsive to the participant's text-messages or ostracized the participant by not responding to any of the participant's messages. Despite the rather trivial interactions, the general conversations with strangers, participants in both studies showed ostracism's effect (e.g., thwarted basic needs, negative affect) when they were not included.

Considerations for Using Chat Room or Text-Message Paradigms. Both of these approaches represent experiences individuals have frequently—especially not being messaged back. To test social exclusion effects in these contexts, a researcher requires significant resources to run the study as confederates have to be trained to engage in the chat room and text-message conversations. Further, researchers can only run one participant at a time. Additionally, the variability in how participants can act in the chat room and with their messaging may make it hard for the experimenter to consistently administer the manipulation.

Exchanging Videotapes Paradigm

One way to make individuals feel rejected through an interpersonal interaction, which does not involve training a number of confederates, is through exchanging videotapes. Maner et al. (2007) extended a previously used videotape paradigm (e.g., Bushman, Bonacci, van Dijk, & Baumeister, 2003; Vorauer, Cameron, Holmes, & Pearce, 2003). In Maner et al., participants started the experiment by being told they would interact with a partner by sending videotaped messages and then being able to meet face-to-face. The experimenters used the cover story that they were interested in how restricting initial meeting situations would then influence communication. The video exchange began by having participants view a video ostensibly made by the participant's partner (it was actually a prerecorded message) that was 3 min long and presented a friendly same-sex confederate who discussed personal and career goals. In Vorauer et al. (2003), the confederate spoke about topics from a list that the participant also had access to. After participants viewed their partner's video, they recorded their own video response to the same set of questions that the partner responded to. The experimenter then supposedly took the participant's video to the partner. The manipulation of exclusion came next.

After 5 min past, the experimenter returned and delivered the exclusion manipulation, which involved participants learning their partner would not be doing the task with them. Specifically, participants in the irrelevant-departure condition

were told that after their partner watched the participant's video he or she left suddenly due to forgetting something. Participants assigned to the personal rejection condition were told that following viewing the video, their partner left suddenly because he or she did not want to meet the participant. DeWall, Twenge, Gitter, and Baumeister (2009) provided the specific rejection language the experimenter used. In both conditions, participants were told they would do the next task alone. The researcher told rejected participants their partner did not want to work with them and asked if the participant knew their partner. The experimenter then told the participant he or she would do the task alone because the researcher could not force the partner to work with the participant. In the control condition, the researcher told participants their partner would not be able to meet with them because she or he had to go to something she or he forgot about, so the participant would have to do the task alone. Stillman et al. (2009) modified the protocol used by Maner et al. (2007) to create different control conditions by telling participants in the irrelevant-departure condition that the partner abruptly remembered an important appointment and had left *prior* to seeing the participant's video. Additionally, Stillman et al. included an accepted condition in which participants were told their partner evaluated them favorably and that they were looking forward to meeting them. The videotape exchange paradigm is powerful and still maintains a high degree of control.

Considerations for Using the Exchanging Videotapes Paradigm. The exchanging videotapes paradigm addresses some of the limitations of the get-acquainted paradigms, particularly the difficulty with needing multiple confederates or a specific number of participants. The exchanging videotapes paradigm also reduces threats to internal validity because there are fewer components of the experiment procedure that could vary compared to the get-acquainted paradigms. In the videotape manipulation, the paradigm can be delivered more consistently and only one experimenter is needed. However, the task still involves considerable resources; particularly, videotaping the initial confederate response, training a highly involved experimenter to consistently administer each step of the protocol, and only one participant can be run each session (without careful coordination of participant scheduling). Additionally, participants might be suspicious of the manipulation and, just like the strain put on the confederates during the in-person ball-toss game (Williams & Sommer, 1997), the experimenter in the rejection condition may become distressed by having to consistently reject participants. The exchanging videotapes paradigm may work best for replicating effects based on the get-acquainted paradigms.

Additional Paradigms

Researchers have also manipulated rejection between a participant and a partner, or partners, in several other ways. As one example, DeWall, Baumeister, and Voh (2008) engaged participants in a task that required help from an assistant (actually a

confederate) to do part of a learning task. Helping to set up the later manipulation, when the experimenter introduced the participant to the assistant, the assistant looked quizzically, but then smiled at the participant. For the manipulation, following completing some forms unrelated to the experiment, the experimenter told participants in the rejected condition that their partner would not be reading the cards to the participant because she was not comfortable with this (the experimenter asked if they met before) or, in the irrelevant departure condition, the partner would not be doing the task with the participant because she had to go to something she forgot about.

As a similar example, using an exchange of get-acquainted questionnaires, Buckley, Winkel, and Leary (2004) had participants complete a questionnaire about themselves that was intended for others to use to form an impression. After participants completed their questionnaire, it was given to their supposed partner and the participant was given a questionnaire ostensibly completed by a same-gender partner that was actually completed ahead of time. Participants then indicated how much they wanted to work with the person who they evaluated. As a manipulation of rejection, participants received feedback from their partner (prepared beforehand) that indicated one of five levels of acceptance-rejection: extreme rejection, moderate rejection, neutral, moderate acceptance, and extreme acceptance. As part of the rejection feedback, Çelik, Lammers, van Beest, Bekker, and Vonk (2013) told participants their partner did not want to work with them due to the participant being low in warmth or competence. The feedback differentially affected participants' affective response to the rejection. These studies are all simplified versions of the get-acquainted and videotape paradigms, but yet still effective.

Zadro and Williams (2006) developed an exclusion manipulation that involved role-playing. Specifically, participants acted out a 5-min train ride in which two participants either ignored or argued with a participant in between them. The researchers set up the lab like a train car, gave participants tickets that assigned them roles, and gave the participant who was to be ostracized a scenario where he or she had not invited the other two riders in the row to a party due to a limit on the number of guests. The two participants doing the ostracism were instructed to "ignore (the target) completely no matter what they may say or do," (Zadro et al., 2005, p. 130). The researchers examined both the perspective of the person being excluded (target) and the person doing the exclusion (source).

Considerations for Using the Additional Paradigms. The additional rejection paradigms have their own positives and negatives. From an experiential learning perspective, riding the "O" Train is an effective exercise to have students experience and learn from an episode of ostracism—both from the perspective of being ostracized and how it feels to ostracize others (Zadro & Williams, 2006). Considering the "O" Train as a manipulation of ostracism, this paradigm can be limiting because either confederates or a number of participants need to be available to be assigned the role of ostracizing another participant. These studies again have strong external validity, but are limited by the resources they need. The rejection paradigm by Buckley et al. (2004), in which a participant is rejected after his or her partner supposedly formed an impression of the participant, may have the ideal balance

between internal and external validity and needs minimal resources. These interpersonal rejection paradigms, and others discussed above, have numerous strengths, but there are important aspects to consider before implementing them.

Written Material Manipulations of Social Exclusion

In this category of social exclusion manipulations, I explain the details of using various writing prompts to induce feelings of social exclusion. Specifically, I discuss paradigms involving participants recalling or pre-living (i.e., imagining a future time) social exclusion or giving participants false feedback, based on a personality inventory, indicating the participant will live a life full of inclusion, a life alone, or a life of misfortune.

Reliving and Pre-living Exclusion

One method for understanding how individuals feel and behave when they are socially excluded is to simply ask them to think about a previous instance of exclusion. Researchers found instances of social pain (e.g., rejection, ostracism) can be relived easily, causing the individual to feel similarly to how they did when the initial experience occurred (Chen et al., 2008). Researchers prompted the reliving of social pain by asking participants to recall, in detail, "an experience of betrayal by a person who was close to them," (Chen et al., 2008, p. 790; see also Riva, Wirth, & Williams, 2011). To encourage participants to psychologically reexperience the time they recalled, participants were asked to relive the moment step-by-step in detail and were often also asked to write down how they felt.

In these initial studies, the social pain condition was compared with recalling physical pain, but reliving studies can utilize a number of control conditions such as a negative nonsocial control (e.g., academic failure) or a neutral control (e.g., previous day; Pfundmair, Graupmann, Frey, & Aydin, 2015). Across the recall studies, researchers varied the writing instructions and the conditions they used. For instance, researchers also compared reliving a time of threatening one's belonging compared to threatening one's intelligence (Knowles & Gardner, 2008; Knowles, Lucas, Molden, Gardner, & Dean, 2010). Those in the belonging threat condition were asked to write about a time they felt intensely rejected or a time participants felt they did not belong, whether it was interpersonal in nature or rejection from a group (Knowles et al., 2010). This condition was compared to recalling an intense failure in an intellectual domain. Other researchers were more general in how they asked participants to recall previous social exclusion. For instance, research by Bernstein, Young, Brown, Sacco, and Claypool (2008) randomly assigned participants to write about a time they felt "rejected or excluded," or "accepted or included," or, as a control condition, the participant's morning the day before the study. Despite the fact that recalling social exclusion is a minimalistic manipulation, it still produced a strong effect. Comparing participant's satisfaction of overall basic

needs when recalling a socially painful experience versus a typical Wednesday afternoon (control condition), researchers (Riva et al., 2011) found a particularly strong effect size, $d = 2.24$. The strength and simplicity of this manipulation may explain why it was used in numerous ways previously.

Researchers quickly adapted the social exclusion writing paradigm for a number of different purposes. In one case, researchers (Klages & Wirth, 2014) asked participants to recall a time laughter made them feel excluded, included, or a typical Wednesday (control condition). In addition to reliving past social exclusion, researchers (Chen & Williams, 2012) used this type of approach to have participants pre-live an experience of social pain. That is, participants were asked to mentally visualize, and write down step-by-step, a future experience of betrayal by a romantic partner versus a physical injury. The researchers found participants more easily pre-lived social versus physical pain. Additionally, the researchers found the paradigm is predicated on mental imagery—as individuals had increasingly more vivid mental imagery, they experienced increasing amounts of negative outcomes (i.e., pain).

Researchers also induced social exclusion through having participants write about an imagined scenario. Aydin et al. (2010, Study 5) induced exclusion by having participants imagine themselves as new employees to a company and no work colleagues wanted contact with them just because they were new. The participants' boss also excluded them and ignored suggestions they made at meetings. Those imagining being included new employees were highly accepted by coworkers and they were completely accepted by the company head who was interested in their opinions and ideas. Hitlan et al. (2006) used a similar approach and had participants read a vignette where they manipulated language exclusion. Participants read a vignette where two coworkers spoke to each other in Spanish at work and did not stop, despite a request to speak in English. For those in the included condition, participants read a vignette where the two coworkers spoke Spanish, but offered to teach the participant Spanish and help interpret any words the participant did not understand. As a last demonstration of how written scenarios can be utilized, van Beest and Williams (2011) examined exclusion by having participants read passages from the bible that emphasized God's exclusionary orientation (e.g., "My God, my God, why have you forsaken me!" Mark 15:34), inclusionary orientation (e.g., "Do not be afraid or terrified because of them, for the LORD your God goes with you; he will never leave you nor forsake you," Deuteronomy 31:6), and a control condition (e.g., "In the beginning God created the heavens and the earth. Now the earth was formless and empty, darkness was over the surface of the deep, and the Spirit of God was hovering over the waters," Genesis 1:1–2). This manipulation was especially strong for those individuals intrinsically involved in their faith.

Considerations for Using Written Material Manipulations. The recall, pre-living, or imagining a scenario written manipulations might seem like perfect paradigms—they are efficient, produced strong effects, and are easily adaptable—but they have important limitations that one needs to consider before using them. First, for the recall tasks, individuals may focus primarily on recalling parts of the experience that were extreme or highly emotional (Schwarz, Groves, & Schuman, 1998), which means participants are less likely to recall the entire experience.

This bias in recall might artificially inflate outcomes or relationships between factors. Second, participants might construct memories to fit scenarios (e.g., Loftus & Pickrell, 1995), which means researchers are not necessarily measuring the reaction to the event they want participants to recall. These results suggest the way participants think about exclusion can produce different results. Lastly, when a participant recalls a prior experience, he or she may process it differently than an event that has just occurred (Baumeister, Brewer, Tice, & Twenge, 2007). The use of reliving or pre-living paradigms should be used with these and other disclaimers in mind.

Future Life Alone

Social exclusion researchers previously used a written manipulation that gives participants feedback that they will either live a life filled with meaningful relationships, a life alone, or a life of misfortune. To induce feelings of social exclusion, researchers (e.g., Baumeister, DeWall, Ciarocco, & Twenge, 2005; Baumeister, Twenge, & Nuss, 2002; DeWall & Baumeister, 2006; Twenge et al., 2001) began by having participants complete a personality questionnaire (i.e., the Eysenck Personality Questionnaire; Eysenck & Eysenck, 1975). An experimenter, or alternatively a computer, then analyzed the questionnaire and shared feedback with the participants on how they scored. To establish feedback credibility, participants received accurate feedback on their extraversion score by learning they scored high, medium, or low (e.g., Twenge et al., 2002). Baumeister et al. (2005) gave more detailed feedback about extraversion scores and how they relate to maintaining interactions. Following the genuine feedback, researchers transitioned into providing false feedback in the form of one of three personality descriptions. Specifically, ostensibly based on the participants' personality, participants in the future life alone condition learned they would end up alone later in life (potentially having several short marriages) and current friendships would not last. Participants in the misfortune control condition learned they would be accident prone; they would have a lot of accidents, despite potentially not having many currently. Participants in the future belonging condition learned they would have rewarding relationships throughout their life, including a stable marriage, and they would always have friends and people who care about them (see Twenge et al., 2002, for specific wording). Several studies demonstrated that the brief personality descriptions have a strong impact on participants across a number of variables.

Considerations for Using the Future Life Alone Paradigm. Researchers considering the future life alone paradigm should also keep in mind it may produce different results compared to other social exclusion paradigms and it may present some challenges ethically because of the false feedback. For instance, Bernstein and Claypool (2012a, 2012b) found the future life alone paradigm led to numbing of physical pain and no effect on basic needs or negative mood. By contrast, Cyberball led to a hypersensitivity to physical pain, decreased basic needs satisfaction, and increased negative mood, due, in part, to differences in the severity of the

social injury. Other researchers (Chen et al., 2008) raised concerns about the misfortune control condition. The condition of imagining a life of chronic pain may be a problematic control condition due to social pain being easily relived, in contrast to physical pain that is more difficult to relive. Lastly, providing false feedback presents some ethical challenges to consider given that even after going through a debriefing process, participants are still inclined to internalize the false feedback (Ross, Lepper, & Hubbard, 1975). Still, the future life alone paradigm is currently the best method for inducing feelings of long-term exclusion in a controlled lab environment. Other social exclusion paradigms focus more on short experiences of exclusion, whereas the future life alone paradigm is a way of inducing exclusion that is perceived to last for a substantial amount of time. It is a simple manipulation, with a strong impact, but one must consider the ethical implications.

Conclusion

Picking the perfect research paradigm is a daunting proposition, especially in the case of social exclusion where an abundance of paradigms are utilized. It can be difficult to know where to start or how to break away from a paradigm that has worked well for you previously. My hope is this chapter provides a starting point for you to explore possible research paradigm options. To help you with the decision making process, I guide you using a decision making tree (Fig. 1) that started with three broad categories of social exclusion paradigms based on who delivers the social exclusion manipulation: interactions with computer avatars, interactions with other individuals, and written material manipulations of social exclusion. Within each of these categories, I describe specific paradigms social exclusion researchers used previously—some with more frequency than others. Hopefully, as you considered each category of social exclusion paradigms and other parameters of your research, you were able to select a paradigm that would work well for you. If not, you may need to read some of the original articles that are cited here as they may provide the additional information you need to make a final decision.

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Part II
**Psychological Approaches
to Social Exclusion**

Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion

Michael J. Bernstein

Among the many experiences and motivations critical to human survival, the innate drive to affiliate with others is one of the most fundamental (Baumeister & Leary, 1995; Buss, 1990). Human survival is facilitated by stable social bonds and hierarchies, and some have argued that group living was selected as an adaptation for human psychology exactly because it proved so valuable to helping humans manage problems they faced in their environments during their evolutionary history (Brewer, 2004). Living in groups offers better access to social support as well as to food, water, and shelter. It offers better access to protection from environmental dangers, predators, and other bands of humans, as well as increased access to other potential mates (Buss, 1990, 1991; Duncan et al., 2007). Belonging is, in many ways, as foundational to human survival as much more biological imperatives like food or water (Baumeister & Leary, 1995; Maslow, 1943).

Beyond facilitating basic survival and reproduction, it is also the case that humans derive multiple psychological and physiological benefits from maintaining stable social connections. The world is a chaotic place, and people are highly motivated to predict and understand causal relationships in the world (e.g., Bruner, 1957). In order to understand what is otherwise a very chaotic landscape, individuals look to the groups to which they belong for guidance; in fact, some have argued that one of the primary psychological purposes of group formation and identification is to reduce uncertainty about the social world (Hogg, 2004). By focusing on the norms and attitudes of the groups to which they belong, individuals can create a greater sense of certainty about how to behave toward and what to expect from people in the same or other social groups. They can determine how to

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act in situations where they may lack accurate insight (e.g., Sherif, 1937). Beyond uncertainty reduction, people derive positive self-esteem from their groups as well as a sense of identity (e.g., Tajfel, 1982).

In addition to these broad benefits that groups offer, people who have stable social access show reduced stress (both in terms of self-report and psychophysiological markers such as cortisol, e.g., Heinrichs, Baumgartner, Kirschbaum, & Ehlert, 2003) and are better at coping with stress generally (Cohen, Sherrod, & Clark, 1986). This is perhaps not surprising given the social buffering hypothesis (Cohen & Wills, 1985), which suggests that social support both benefits people directly and indirectly as well as acts as a buffer against stressful events. People with more social connections also engage in less antisocial behavior (Sampson & Laub, 1993). There is also some evidence to suggest that poor social connections can lead to increased incidence of psychopathology (Bhatti, Derezotes, Kim, & Specht, 1989; for the role of social exclusion in the development of psychopathology, see chapter "Research in Clinical Psychology: Social Exclusion and Psychological Disorders"). Social isolation can have a host of negative consequences including loneliness (Jones, 1981), decrements in immune functioning (Kiecolt-Glaser et al., 1984), and anxiety (e.g., Mathes, Adams, & Davies, 1985), among others.

Given the inherent value of stable social belonging, it should come as no surprise that individuals react strongly when their belonging needs are thwarted. This is sensible as such actions should provide a motivational incentive to remedy the situation that has blocked one's belonging satisfaction. In the current chapter, I elaborate on these reactions to social exclusion. With respect to the responses to short-term experiences of exclusion (i.e., those experiences of exclusion which occur at a single moment in time and are not chronic, such as a breakup), I examine how some of these consequences seem adaptive to the goal of facilitating reaffiliation, while others seem inconsistent with the immediate goal of affiliation, while others appear somewhat neutral to those ends. I consider the classification of responses as prosocial, antisocial, and socially avoidant and what predicts which response will prevail.

I also discuss consequences in terms of existing research on loneliness and chronic social isolation, and I examine longitudinal work and studies employing ecological momentary assessment to examine the impact of social connectedness on health and well-being. I also consider the consequences of prolonged exclusion in the penal system as well as the relationship between chronic social exclusion and school violence.

Finally, I conclude with a review of proposed models, mechanisms, and moderators of social exclusion and how they might explain the often seemingly contradictory findings in the literature for acute responses to exclusion. Models and moderators such as the Social Monitoring System (Pickett & Gardner, 2005), availability for affiliation (DeWall & Richman, 2011), and the Multimotive Model (Richman & Leary, 2009) all offer avenues to help explain what appear as rather contradictory findings in the literature.

Consequences of Short-Term Social Exclusion

Given the dangerous pressures levied upon an excluded individual, one might expect exclusion to lead to behaviors that are aimed exclusively at ameliorating the situation—helping excluded individuals either mend their broken social bonds or find new affiliation opportunities. This is indeed often the case. Responses to social exclusion are often clearly affiliative (e.g., K. D. Williams, 2007). K. D. Williams and Sommer (1997) found that excluded individuals do engage in more prosocial behavior. Specifically, excluded women were less likely to engage in social loafing and more likely to help in a task when participating in a group project. These authors asserted that the additional work participants contributed during a conjunctive task was motivated by an increased desire to reaffiliate and with the goal of highlighting their own value as a potential group member, thus enhancing the likelihood of successful affiliation. This is similar to the findings of Carter-Sowell, Chen, and Williams (2008) who found that, following social exclusion, individuals became more compliant to the requests of others, being more willing to acquiesce to requests made of them (in the context of obedience, also see Riva, Williams, Torstrick, & Montali, 2014).

This is consistent with Maner, DeWall, Baumeister, and Schaller's (2007) work which found that individuals who were excluded did not aggress against but rather showed affiliative behaviors towards targets they believed were possible interaction partners. Across six studies, researchers found evidence for a social reconnection hypothesis (e.g., Baumeister & Leary, 1995). Excluded participants were more interested in joining social clubs, more interested in working with others, perceived others more positively, and behaved more prosocially by assigning greater rewards to a potential interaction partner. Importantly, these effects were limited only to novel or neutral targets with respect to the initial exclusionary experience (e.g., excluded participants were not prosocial towards the perpetrator of the exclusion). Further, attempts at social reconnection only occurred when participants anticipated interacting with the novel target; if the new target was clearly not available for affiliation or the potential for affiliation was low, resources for such affiliative responses were withheld. Excluded individuals find themselves in a precarious position—when one's survival is on the line, one cannot waste resources on futile affiliation attempts.

Though controlled efforts can be allocated to enhance the likelihood of reaffiliation (i.e., working harder in group tasks or offering help to possible affiliation partners), automatic responses that might aid in reaffiliation have also been found. In two studies, Lakin, Chartrand, and Arkin (2008) found that excluded individuals showed greater nonconscious behavioral mimicry of a future interaction partner (specifically identified as not being associated with the original social exclusion experience) than those not excluded. Previous research has demonstrated that behavioral mimicry increases liking and rapport with the target being mimicked (Lakin & Chartrand, 2003) and thus may serve a reaffiliative function. In both studies, participants who mimicked their interaction partners more were rated as more likable by those partners than those who mimicked less. Importantly, when

probed about behavioral mimicry, participants were unaware of their behaviors, suggesting this is an automatic, reflexive, nonconscious response to social exclusion as outlined by other researchers (e.g., K. D. Williams, 2007).

Such nonconscious affiliative behaviors towards others are consistent with other work as well, which broadly demonstrates that socially excluded people are particularly attuned to socially relevant information. In a study conducted by Gardner, Pickett, and Brewer (2000), individuals read diary entries after experiencing an exclusion or acceptance manipulation. The diaries included intrapersonal, interpersonal, and intergroup behaviors. Memory for the information was examined at the end of the study. Compared to accepted individuals, excluded individuals recalled more social information (both interpersonal and intergroup). Further, excluded individuals recalled more social than intrapersonal information, suggesting that excluded individuals are especially attuned to socially relevant signals.

These findings are similar to work done by Pickett, Gardner, and Knowles (2004) which found that individuals dispositionally high in the need to belong were better at identifying facial expressions and vocal tones than those low in the need to belong, but that this increased accuracy was related only to social perception and did not extend to nonsocial stimuli. A more recent set of studies examined exclusion's effects on the discrimination of real and fake smiles (Bernstein, Young, Brown, Sacco, & Claypool, 2008). According to these researchers, a real smile is a sign of affiliation, cooperation, and altruism, whereas a fake one masks true intentions (Ekman, Davidson, & Friesen, 1990). Thus, it would be adaptive for excluded individuals to be able to make this discrimination, so as to identify the "best" candidates with whom reaffiliative efforts will be successful. In Bernstein et al.'s (2008) work, participants wrote about a time they were included, excluded, or a control condition (their day yesterday) and then saw 20 videos of individuals exhibiting a smile that was either genuine or fake. Participants decided, for each video, whether the person in the video was exhibiting a real or fake smile. The results indicated that excluded participants were better at discriminating between real and fake smiles, as compared to included or control participants. In a separate study (Bernstein, Sacco, Brown, Young, & Claypool, 2010), the researchers extended the work by showing that excluded participants are more selective in terms of whom they want to work with on a future task, showing a particular desire to work with people exhibiting real smiles and avoid those exhibiting fake smiles, as compared to the non-excluded participants. The researchers interpreted their findings as evidence that excluded individuals are careful information processors when it comes to social targets, because they need to be judicious in terms of how they allocate resources for potential affiliation. This work is akin to recent findings showing that social exclusion results in an increased ability to discriminate between truths and falsehoods as well, though this work found this was true only when the lie contained verbal information that was highly relevant to affiliation (Eck, 2016).

Others have extended this work, suggesting that social exclusion influences early stage attentional processes. DeWall, Maner, and Rouby (2009) found that social exclusion resulted in individuals becoming attuned to signals of inclusion or acceptance. In their first study, the researchers found that excluded individuals were

particularly fast to identify smiling faces in a crowd of non-smiling faces, and were far slower to attentionally disengage from smiling faces in a separate task (Study 4). Using eye-tracking, they also found that excluded individuals fixated attention more on smiling faces. Importantly, these attentional benefits only occurred for positive, social targets; when the targets showed disapproving facial expressions or were non-social images, socially excluded participants did not show any increase in attentional attunements. The researchers interpreted their findings as evidence that social exclusion prepares people to be particularly attuned to signals of potential affiliation as a means of potentially altering more downstream behaviors (e.g., approaching others).

Because people are particularly attuned to social signals (e.g., Bernstein et al., 2008, 2010; Pickett et al., 2004), and because allocating resources to good affiliation targets is so important to excluded individuals (e.g., Maner et al., 2007), recent research proposed that excluded individuals should be less likely to stereotype and more likely to individuate others (Claypool & Bernstein, 2014). Therefore, carefully thinking about and encoding information about other social targets should be particularly important for socially excluded individuals, because it is so important for them to find targets whom are good potential affiliation partners. Conversely, stereotyping a target might reduce the pool of individuals an excluded person is willing to affiliate with, which would reduce the probability of successful affiliation. Relying on stereotypes is a potentially risky avenue for person perception; an excluded person who stereotypes a female target as warm (e.g., Eagly & Mladinic, 1989) and thus a good candidate for affiliation may be rebuffed and experience further social exclusion if she or he did not notice individuating information suggesting the female target's disinterest in affiliation. Similarly, excluded individuals could miss an opportunity for affiliation by relying on stereotypes rather than individuating; assuming that an African American target possesses a high degree of the stereotypic trait of aggressiveness (e.g., Devine, 1989) or an Asian target is too cold to be a good affiliation partner (Lin, Kwan, Cheung, & Fiske, 2005) might cause excluded individuals to miss out on affiliation opportunities. Across several studies, Claypool and Bernstein (2014) found that socially excluded individuals stereotyped targets less and individuated them more. For example, in one study, when reading about individuals described as counter-stereotypic with respect to their jobs (e.g., a nonassertive, nondeceptive lawyer), excluded individuals attended to the individuating information and rated the targets as less on the stereotypic dimensions. Non-excluded participants rated the targets as relatively more stereotypic; rather than paying attention to the individuating information, they instead relied on the stereotype to evaluate their targets.

Broadly, the literature suggests that socially excluded individuals become particularly attuned to seeing the world and others in ways that may facilitate the goal of reconnection, and a litany of other additional work supports this claim. Social exclusion results in the perceptions that others are closer to the victim (Pitts, Wilson, & Hugenberg, 2014), and this is true for accepting others and even neutral targets, but not the perpetrators of social exclusion (Knowles, Green, & Weidel, 2013). Excluded individuals become more sensitive to distinctions between in-groups and out-groups (Sacco, Wirth, Hugenberg, Chen, & Williams, 2011), a response that

should aid in identifying likely affiliation partners, and this identification even extends to face memory (Bernstein, Sacco, Young, & Hugenberg, 2014). They become better at managing the emotions of others (Cheung & Gardner, 2015). Social exclusion and inclusion change the way we think about others with respect to dating and mating (e.g., Sacco, Brown, Young, Bernstein, & Hugenberg, 2011; Sacco, Young, Brown, Bernstein, & Hugenberg, 2011). Even our perceptions of our own group identities change following social exclusion; excluded individuals see themselves as more similar to their in-groups (Sacco, Bernstein, Young, & Hugenberg, 2014), and group identities become more activated and in-groups are perceived as more entitative (i.e., cohesive and unified) following social exclusion. To the extent that these two changes occur, self-esteem also increases, thus facilitating recovery from the threat of exclusion (Knowles & Gardner, 2008).

While much of this research portrays socially excluded individuals as responding in ways that should facilitate reaffiliation, some research suggests that this routinely is not the case. Often, for example, social exclusion precipitates aggressive behavior (Baumeister & Leary, 1995; Baumeister, Smart, & Boden, 1996; Leary, Twenge, & Quinlivan, 2006), a response unlikely to lead to successful reintegration into the group. In seminal work, researchers found that excluded people evaluated targets more negatively and blasted targets, who initiated the exclusion, with more aversive noise relative to included participants (Twenge, Baumeister, Tice, & Stucke, 2001). Other research has supported the claim that recently excluded individuals are significantly more likely to aggress against the perpetrator of their social exclusion (Buckley, Winkel, & Leary, 2004; Bushman & Baumeister, 1998) and even against "innocent" targets who were not involved in the original exclusion situation (Twenge et al., 2001). Other researchers have demonstrated that this aggressive response is even stronger against groups perceived as being high in entitativity, perhaps because a depersonalization of the targets makes every member of a highly entitative group seem equally guilty, in the eyes of the victim, as the specific member inflicting the social exclusion (Gaertner & Iuzzini, 2005).

Beyond causing seemingly antisocial behaviors, researchers have found other effects following social exclusion that, on their face, may seem contrary to the goal of affiliation. Baumeister, Twenge, and Nuss (2002) found that individuals suffering a social exclusionary episode experienced decrements in their cognitive abilities. Participants were exposed to a manipulation of social exclusion (one in which individuals were told their responses on a personality inventory were predictive of individuals whose future lives would be spent alone, i.e., the future life alone paradigm; see chapter "Methods for Investigating Social Exclusion"). Following this, they performed worse on GRE tasks (i.e., a standardized test used as an admission requirement for many graduate schools in the USA), answering fewer problems correctly and being slower to do so, as compared to those in the accepted and control conditions (who were given different feedback on the personality test). Interestingly, this deficit in cognitive abilities was only true for logic and reasoning-based problems, and not for those based on simple information encoding. Baumeister et al. argued that this reduction in intelligent thought occurred only for complex reasoning skills, which require effort and control, whereas more automatic processes should not be affected

by social exclusion. They assert this may be because intelligence, which may exist for the purpose of navigating complex social systems, is less important once an individual has been excluded from such a system. An alternative explanation, however, does exist and stems from the Social Monitoring System (Pickett & Gardner, 2005) which will be discussed later in this chapter.

Other deficits, beyond the cognitive domain, occur as well. Baumeister, DeWall, Ciarocco, and Twenge (2005) found that, following social exclusion, individuals were less able to exert self-regulatory abilities. Using several dependent measures, results consistently indicated that excluded individuals were less able to self-regulate on tasks such as those involving dichotic listening, those involving active avoidance of pleasure (i.e., not eating cookies), and those requiring individuals to engage in disgusting but healthy tasks (i.e., drinking a poor tasting health drink). Interestingly, when excluded participants were motivated to self-regulate (via a monetary incentive), they were able to regulate their behavior. The researchers suggested that excluded individuals do in fact maintain the ability to self-regulate, but that social exclusion strips them of the necessary motivation to do so. Should that motivation be reinstated, self-regulation can again be reconstituted (for a more detailed review of the ongoing debate concerning self-regulation, see Inzlicht & Schmeichel, 2012; Job, Bernecker, Miketta, & Friese, 2015; Job, Dweck, & Walton, 2010). These findings are somewhat similar to findings by Twenge, Catanese, and Baumeister (2002) who found that socially excluded individuals, relative to control participants, engaged in more self-defeating behaviors, taking more risks, selecting more unhealthy snacks, and were more likely to put off studying for an upcoming exam. This particular study, however, employed the future life alone paradigm which seems to elicit a sense of chronic exclusion (see chapter "Methods for Investigating Social Exclusion").

While prior work suggested social exclusion results in more prosocial behavior (e.g., K. D. Williams & Sommer, 1997), excluded individuals, in some instances, appear to do the opposite (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). Across seven studies, researchers manipulated exclusion either using the future life alone paradigm (in which participants are told they will live a life alone, devoid of social relationships) or used the get-acquainted paradigm in which participants are led to believe no one selected them as a partner on a task (see chapter "Methods for Investigating Social Exclusion"). In each case, compared to participants who were included, excluded participants engaged in less prosocial behavior, donating less money to a student group, being less willing to help an experimenter with additional lab studies, helping less after someone dropped pencils, and cooperating less in a mixed-motive game. The researchers found that this effect was mediated by reduced empathy for targets (but not by other possible mediators, including basic needs or mood).

There are a host of other consequences of social exclusion that seem to change the way we perceive ourselves and others in ways that seem inconsistent with the goal of reaffiliation. Excluded individuals see themselves and the perpetrators of their exclusion as less human and believe that others perceive them as less human (Bastian & Haslam, 2010). They feel entitled and are more dishonest (Poon, Chen, & DeWall, 2013).

Excluded people find life more meaningless (Stillman et al., 2009). Twenge, Catanese, and Baumeister (2003) similarly found changes in excluded participants' perceptions of meaningfulness in their lives, but also found that excluded individuals had changes in time perception, were more lethargic, had difficulty delaying gratification for rewards, and showed less emotion than did non-excluded participants (a finding consistent with emotional numbing suggested by Twenge, Baumeister, et al.'s [2007] work showing reduced empathy for others). Further, they also found that excluded participants were less likely to select a seat facing a mirror, instead choosing to face a blank wall, than were other non-excluded participants. The researchers interpreted this as a sign that excluded participants avoid situations that make them self-aware (mirrors have been used as a manipulation to increase self-awareness; e.g., Diener & Wallbom, 1976), a consequence which the authors assert could have deleterious consequences for interpersonal reconnection.

While much of the recent work in experimental social psychology has focused on these various consequences of acute or short-term social exclusion, other research speaks to the multitude of outcomes related to more chronic or long-term social exclusion and isolation. In the following section, I review that work.

Consequences of Long-Term Social Exclusion and Isolation

Psychologists and philosophers have, for some time, suggested that isolation and exclusion from others can have deleterious effects. Thoreau, after having been away from people for only a few weeks, "doubted if the near neighborhood of man was not essential to a serene and healthy life," and later describes a "slight insanity" in his mood (Shanley, 1971). More recently, K. D. Williams (2007) suggested that some people may experience long-term ostracism—being ignored and excluded by others in their lives repeatedly—and while little research directly examining chronic exclusion exists, there is evidence that alludes to such consequences.

While not experimental, social psychologists have investigated how chronically excluded people think about their social exclusions. As discussed in other work (K. D. Williams, 2001; Zadro, 2004), researchers interviewed more than 20 individuals who described themselves as having experienced the silent treatment (i.e., not being spoken to or acknowledged by another) for prolonged periods of time. Such individuals' responses to prolonged, chronic ostracism were indicative of an inability to manage the experiences; individuals failed to cope with the loss of the social connections, being unable to better their affiliative relationships by mending the social bonds or by engaging in aggressive, retaliatory behaviors to reestablish control (e.g., Warburton, Williams, & Cairns, 2006). Physical and mental well-being were worsened with suicidal ideation and actual suicide attempts occurring among some of the persons interviewed. Other psychological well-being related issues arose following the ostracism, including eating disorders and increased sexual promiscuity. Some participants reported preferring to be physical abused than to be ignored, because physical abuse would have at least been recognition of their existence.

Further, a large body of work suggests that long-term social connectedness is related to positive health-relevant outcomes while social isolation is related to negative health-relevant consequences. Research among married couples found those who report higher satisfaction in their relationships have better physical health and psychological well-being relative to participants in less supportive social relationships, and this remained true even during and following stressful days (DeLongis, Folkman, & Lazarus, 1988). Other work too supports the importance of perceived availability of social support for both physical (Wallston, Alagna, DeVellis, & DeVellis, 1983) and mental health (Kessler & McLeod, 1985). Social support, through which emotional support is perceived, is directly related to stress reduction (Coyne & DeLongis, 1986).

With respect to mortality rates, research clearly reveals that rates are significantly higher among single, divorced, and widowed individuals relative to married couples (Lynch, 1979). Further, women in unhappy marriages or who were divorced or separated are found to have poor immune functioning (Kiecolt-Glaser et al., 1987). Similarly, research has found that perceived social isolation is related to poorer immunocompetence (Kiecolt-Glaser et al., 1984). Among patients with heart failure, social isolation significantly predicted mortality rates (Friedmann et al., 2006). Additionally, volunteers isolated in chambers at an aerospace institute showed increases in salivary cortisol and abnormal patterns of circadian rhythm variation (Hennig & Netter, 1995).

Extended isolation causes deficits for mental health as well. Socially isolated elderly individuals show higher levels of physiological arousal than do socially engaged individuals (Larson, Zuzanek, & Mannell, 1985; for a review of research on social exclusion in aging adults, see chapter "Research in Social Gerontology: Social Exclusion of Aging Adults"). Among retirees, lower sense of belonging was associated with engaging in fewer physical activities with others (as opposed to physical activities engaged in alone) which in turn predicted more depression and more suicidal ideation (Bailey & McLaren, 2005). Further, fewer social connections and poorer adequacy of those relationships has been associated with increased depressive symptoms (for review, see Barnett & Gotlib, 1988). The relationship between poor social connections and physical and mental health is clear (e.g., Uchino, Cacioppo, & Kiecolt-Glaser, 1996).

While certainly not the same as social exclusion, a significant amount of research on loneliness also suggests detrimental consequences of long-term social isolation. Loneliness, or perceived social isolation (Cacioppo & Hawkley, 2009), has to do primarily with the perceived quality rather than quantity of social connections; lonely people do not necessarily report having too few social relationships, but report greater dissatisfaction with those social opportunities. In essence, they report having fewer satisfying social relationships than they would prefer. Lonely individuals have an increased risk of depression (e.g., C. A. Anderson & Arnoult, 1985; Russell, Cutrona, Rose, & Yurko, 1984; Shaver & Brennan, 1991) as well as suicidal ideation (Kirkpatrick-Smith, Rich, Bonner, & Jans, 1991). They are rated as having poorer social skills (C. M. Anderson & Martin, 1995), are less popular (Nurmi, Toivonen, Salmela-Aro, & Eronen, 1996), and tend to be socially anxious

(Segrin & Kinney, 1995). This results in lonely individuals' interpersonal trust being eroded over time as compared to non-lonely individuals (Rotenberg, 1994).

Prolonged social isolation is so aversive that legal systems often use it as a means of punishment for prisoners. Solitary confinement refers to the act of separating a person from the general population, often as punishment for some infraction (Haney & Lynch, 1997), and has been used extensively in both the USA and Europe in the late 1800 and early 1900s (Rothman, 1971). Researchers have suggested such practices elicit trauma and harm to both physical and mental well-being (Finke, 2001), exacerbating mental illness among individuals with preexisting conditions, but also causing negative psychological effects in otherwise healthy individuals, even when the isolation was for as little as 10 days (Haney, 2003). These psychological consequences included hallucinations, anger, depression, suicidal ideation, and emotional breakdowns (Kupers, 2008). It is unequivocally clear that such experiences of prolonged isolation from others have significant and deleterious impacts on individuals' mental health. Nonetheless, as recently as 10 years ago, roughly 80,000 prisoners in state and federal prisons in the USA were held in solitary confinement (e.g., Gordon, 2014).

To further understand the power of prolonged or chronic social exclusion, we can examine literatures related to discrimination and stigma for additional insights. Prejudice, discrimination, and stigma offer their own impact on chronic exclusion, insofar as members of groups that are the target of such experiences often feel isolated from the society and cultures in which they live. Many minority groups experience racial microaggressions (e.g., rudeness or insensitivity that may demean a person's race; for review, see Sue, 2010; Sue, Bucceri, Lin, Nadal, & Torino, 2007) that cause considerable stress for the targets of the behaviors (see chapter "Social Exclusion in Everyday Life", reporting that microaggressions elicit feelings of social exclusion). These microaggressions may cause minority individuals to feel powerless and invisible (Sue et al., 2007), responses that are similar to the loss of control and meaning associated with the threatened needs K. D. Williams (2007) and others refer to following social exclusion. Such prolonged experiences of discrimination result in severe health disparities as well, with targets of discrimination having higher rates of substance abuse (e.g., drugs; Gibbons, Gerrard, Cleveland, Wills, & Brody, 2004; smoking; Harris et al., 2006; Landrine & Klonoff, 1996), and generally worsened health across a broad spectrum of measures (for review, see D. R. Williams & Mohammed, 2009). The implications for chronic feelings of exclusion are clear.

Some of the most devastating consequences of chronic social exclusion are gleaned from the literature concerning school violence. Acts of school violence, often occurring after experiences of bullying and social exclusion, have become all too common in the past few decades. In the USA, since the mid-1990s, school shootings have resulted in more than 200 deaths and many injuries among youth (M. Anderson et al., 2001). We are now a decade into the next millennia and the numbers with respect to school violence are still alarmingly high. Many Americans remember vividly where they were when they first heard of the shooting at Columbine High School, just as previous generations recall the shooting at University of Texas, Austin in the 1960s. These incidents have become such a part of our cultural vernacular that even students now attending their first year of college

are familiar with the events of the Columbine shootings even though they were only 6 years old when it occurred. While such violence is multifaceted, much work has been done to examine the role that chronic social exclusion has on these instances.

Leary, Kowalski, Smith, and Phillips (2003) performed case studies on 15 school shootings, with any lethality, from 1995 to 2001. Their findings were clear; in 13 of the 15 case studies, chronic and/or acute social exclusion occurred immediately before the violent episodes. While other factors were also identified as being present (e.g., a fascination with guns and explosives, mental health related problems, and an interest in death), it appears that the experience of social exclusion is particularly dominant in leading individuals to engage in violent acts and may interact with these other traits to create a scenario where violence occurs.

M. Anderson et al. (2001) found that between the years of 1994 and 1999, there were over 220 events in which violence occurred at a school or school-related setting and in which at least one person was killed. Over 250 deaths were identified as having occurred among those events. Consistent with prior findings, the perpetrators of school homicides were likely to have experienced chronic exclusion and bullying by their peers and were more likely to be considered loners, often experiencing long-term social isolation relative to other students in their peer group (M. Anderson et al., 2001). This echoes some of the findings from Leary et al.'s (2003) work as well as the findings from the U.S. Secret Service National Threat Assessment Center on the prevention of school violence (Vossekuil, Reddy, Fein, Borum, & Modzeleski, 2000). Though they make it clear that many students who are the victims of chronic exclusion do not themselves engage in violence, they also assert that chronic exclusion by peers is nonetheless a risk factor in many cases of school violence.

Having now covered the consequences of social exclusion, following both acute experiences as well as chronic ones, I turn to proposed underlying mechanisms for such effects as well as moderating variables that have been proposed to explain the often apparently contradictory findings that stem from acute experiences of social exclusion.

Models, Mechanisms, and Moderators

As outlined earlier in the chapter, the consequences that follow acute experiences of social exclusion are robust but often seem to be contradictory to each other. As a result, a host of moderating variables having been suggested to explain when and why people behave in different ways. Further, a number of theoretical models have been put forward to explain the underlying mechanism by which these behaviors occur.

One of these models focuses on the research showing that excluded individuals become highly attuned to social information, presumably to aid in reaffiliation processes (e.g., Bernstein et al., 2008, 2010; Gardner et al., 2000; Pickett et al., 2004). Pickett and Gardner (2005) describe their Social Monitoring System account of responses to social exclusion, suggesting a model that acts as a sort of self-regulatory process. In their model, the Social Monitoring System constantly scans the environment

for signs of potentially impending or occurring social exclusion. Once an occurrence is recognized, the system directs resources and prompts behavior in ways that can either prevent the exclusion from happening or help manage reaffiliation, either with the same or different targets, following the exclusion. This model helps explain findings described previously that show socially excluded individuals becoming attuned to social information (e.g., smiles, social information, signs of positivity, nonverbal behaviors for behavioral mimicry), as well as explains the research on why excluded persons become worse at other tasks (e.g., complex cognitive tasks). If resources are being directed to attending to social cues, it is reasonable that they be taken from tasks less relevant to mending social bonds (e.g., performing math problems; Baumeister et al., 2002). Just as hunger leads people to attend quickly to food (Atkinson & McClelland, 1948), the Social Monitoring System helps attune people to social cues of others (e.g., a person checking their watch or tapping their foot as an indication of boredom and desire to extricate themselves from an interaction). By attending to such information, changes in behaviors can occur to better respond to impending exclusion (to potentially prevent it) or to actual exclusion, enabling the person to either mend the broken bond or move on to find other affiliation opportunities.

While the Social Monitoring System is one model explaining how individuals respond following social exclusion, it does not attempt to explain when and why individuals respond with more prosocial rather than antisocial responses. Richman and Leary's (2009) Mulitmotive Model, however, purports to do just that. Richman and Leary argue that responses to exclusion generally fall into one of three categories: prosocial, antisocial, and socially avoidant. While they suggest that, in virtually all cases, the immediate response to social exclusion is one of negative affect and lowered self-esteem, how people respond after is a function of their construal of the situation that produces a motivated response. Construals about the situation include the extent to which there is an expectation of the social bond being repaired, the value of the relationship, whether alternatives are available, the perceived unfairness of the exclusion as well as the chronicity and the cost of the exclusion. The extent to which these are perceived as being high or low affects the type of motivated response (i.e., prosocial, antisocial, socially avoidant) that follows. For example, if the exclusion comes from a high value relationship, the model predicts a prosocial response as compared to if the exclusion comes from a relatively low value relationship. If the exclusion experience seems unfair or unjust, antisocial responses are likely to follow (see also Tuscherer et al., 2015). Finally, if the exclusion appears chronic, individuals are likely to withdraw and avoid social relations. Among these motivated responses, if the behaviors successfully restore a sense of acceptance, individuals experience positive physical and mental health outcomes. If acceptance is not restored following the response, negative mental and physical health consequences follow. This is a particularly strong theoretical model insofar as its explanatory power is vast; while there are apparent contradictions in the literature concerning when people engage in prosocial, antisocial, or socially avoidant responses, this model can account for many of those differential behaviors.

K. D. Williams' (2007) temporal need-threat model suggested that there are three stages of responses to social exclusion—a reflexive stage occurring during and

immediately following exclusion, a reflective stage during which people consider the response to exclusion, and a chronic or resignation stage which occurs following long-term exclusion. K. D. Williams (2007) asserts that the reflexive stage (Stage 1) is incredibly difficult to moderate and acts as an initial, automatic reaction to exclusion (e.g., neurological responses, immediate social pain, need threat). The reflective stage (Stage 2) is where he asserts moderation occurs and where variability in prosocial and antisocial behaviors begins to emerge. It is here where K. D. Williams (2009) argues that how people respond to social exclusion has to do with which cluster of needs are threatened following the exclusionary experience. As stated previously, basic psychological needs include belonging and self-esteem as well as having a sense of control and meaningful existence. According to K. D. Williams, these needs form an inclusionary cluster (belonging, self-esteem) and a power–provocation cluster (control, meaningful existence); when threats to the inclusionary cluster is most salient, prosocial responses occur while antisocial responses follow from threats that make salient the power–provocation cluster. In the final stage (i.e., the resignation stage), excluded individuals focus on avoiding additional exclusion, exhibiting learned helplessness with respect to social interactions. Though this model has not been tested directly, support can be found from the existing literature. For example, reestablishing a sense of control (and thus fixing the power–provocation cluster) following social exclusion eliminates the exclusion–aggression relationship (e.g., Warburton et al., 2006) and satiating the inclusion cluster (by asking individuals to think about a close other) reduce aggressive responding (e.g., Twenge, Zhang, et al., 2007). This need fortification model needs additional testing, however (see Wesselmann, Ren, & Williams, 2015).

DeWall and Richman (2011) argue that the primary determinant of how individuals respond to social exclusion is whether there remains a possibility of reaffiliation. From their perspective, the key predictor of whether people engage in prosocial or antisocial responding is whether a chance of affiliation is present. Socially excluded individuals desire to regain acceptance and will act in ways that can facilitate that goal if they perceive acceptance is possible. If the possibility of affiliation is not likely, however, social exclusion may elicit more inward antisocial or socially avoidant responses. They assert that papers demonstrating aggression following social exclusion (e.g., Buckley et al., 2004) did not offer excluded individuals a reasonable chance of affiliation. When affiliation needs are satiated (e.g., DeWall, Twenge, Bushman, Im, & Williams, 2010; Twenge, Zhang, et al., 2007), aggression does not follow exclusionary experiences. Similar findings occur for helping behavior. While there is work showing that exclusion results in less prosocial behaviors (e.g., cooperating less in a mixed-motive game and volunteering less of their time, Twenge, Baumeister, et al., 2007), these studies did not afford excluded participants the opportunity for affiliation and used particular types of exclusion manipulations (e.g., future life alone). When participants believed they had an opportunity to meet with and engage with a potential interaction partner (e.g., Maner et al., 2007), exclusion resulted in prosocial behaviors.

Additional contradictions exist in the literature that point to underlying moderators. Socially excluded individuals, as already stated, show increased ability in

detecting real and fake smiles (e.g., Bernstein et al., 2008, 2010), identifying others' signals of emotion (e.g., Pickett et al., 2004), and memorizing social information (Gardner et al., 2000). These findings seem to stand in stark contrast to Baumeister et al.'s (2002) findings that social exclusion results in reduced cognitive abilities. Baumeister et al. assert that social exclusion impairs cognitive performance by causing deficits in controlled processing because resources are being diverted from such cognitive processing to suppressing emotional distress. Yet, according to the aforementioned research, even when participants report exclusion to be emotionally painful, it seems to elicit *intelligent* thinking. One potential explanation lies in the type of information to which excluded people are attending. In the paper showing that social exclusion reduces intelligent thinking (Baumeister et al., 2002), the cognitive tasks all involved nonsocially relevant information. In the other tasks in which cognitive performance seems to increase, the tasks are socially relevant. In fact, some studies have examined this more directly; in Gardner et al.'s (2000) work, they found socially excluded individuals had heightened memory for socially relevant, but not for socially irrelevant information. Claypool and Bernstein (2014) found that socially excluded individuals stereotyped less and individuated more, but this only occurred for social targets; when the targets were nonsocial (e.g., a tree), excluded individuals relied on readily available category information to make judgments of the target. Thus, it is possible that social exclusion results in a more nuanced deployment of resources for social, but not for nonsocial information processing, and this could explain the apparently contradictory findings.

Another major debate in the literature, that indicates the presence of a moderating factor, concerns the emotional impact elicited by social exclusion. The question as to whether social exclusion is indeed a painful experience has been debated furiously in the literature, with two meta-analyses coming out at roughly the same time drawing drastically different conclusions. Gerber and Wheeler (2009) concluded that social exclusion does indeed reduce self-esteem and cause emotional pain in its victims. Much work has shown that social exclusion does indeed reduce mood (e.g., Hess & Pickett, 2010; Leary, Koch, & Hechenbleikner, 2001) and other theories predict negative emotional responses to social exclusion (e.g., Richman & Leary, 2009). Exclusion seems to be a painful experience, whether the perpetrator is a computer (e.g., Zadro, Williams, & Richardson, 2004) or a despised out-group (Gonsalkorale & Williams, 2007), and whether being excluded means keeping money (e.g., van Beest & Williams, 2006) or even when it happens to someone with whom a person is psychologically close (e.g., Young, Bernstein, & Claypool, 2009). Other work suggests anger is a common response to social exclusion (see Leary et al., 2006, for review). In one demonstration, participants excluded via Cyberball (see chapter "Methods for Investigating Social Exclusion") experienced increased anger and sadness but only anger was related to later aggressive behaviors participants enacted against others (Chow, Tiedens, & Govan, 2008).

While much evidence suggests a clear relationship between social exclusion and emotional reactions, Blackhart, Knowles, Nelson, and Baumeister (2009) arrived at virtually contradictory conclusions in their meta-analysis, arguing that exclusion results in a state of emotional numbing. There is evidence to support such a claim as

well. Twenge et al. (2003) conducted multiple studies that not only failed to produce a negative emotional reaction or social pain in excluded participants, but actually resulted in an emotionally numb state; participants neither felt increased negative moods nor decreased positive ones. Other work suggests social exclusion numbs our emotional system. DeWall and Baumeister (2006) found that exclusion reduced participants' empathy for others, reasoning that our minds become numb to protect ourselves from the exclusionary experience.

While these outcomes seem difficult to reconcile, some work suggests that there may be fundamental differences in the paradigms used to manipulate social exclusion and that the paradigm used may itself be a moderating factor. Bernstein and Claypool (2012a) found that social exclusion induced via Cyberball resulted in social pain (reduced mood, threatened basic needs) while social exclusion manipulated via the future life alone paradigm resulted in no differences from inclusion. These findings were consistent with existing literatures which often find worsened mood and threatened basic need states following exclusion in Cyberball (e.g., K. D. Williams, Cheung, & Choi, 2000; Zadro et al., 2004), while no effect on mood or self-esteem is found when exclusion occurs via the future life alone paradigm (e.g., Baumeister et al., 2005; DeWall & Baumeister, 2006; Twenge et al., 2003; cf. Bernstein et al., 2013). While additional work is needed to examine these and other, newer exclusion paradigms (e.g., Atimia; Wirth, Bernstein, & LeRoy, 2015; Wirth, Turchan, Zimmerman, & Bernstein, 2014; see chapter "Methods for Investigating Social Exclusion"), this and other work (e.g., Molden, Lucas, Gardner, Dean, & Knowles, 2009) suggest a fruitful avenue for research.

Other models have been suggested for attempting to explain the variety of consequences that follow social exclusion. Both pain overlap theory (Eisenberger & Lieberman, 2005) and social pain theory (MacDonald & Leary, 2005) suggest that social pain is detected by the same neurological systems used to detect physical pain. These theories broadly suggest that both physical injuries and social distance from others posed serious threats to the survival of early humans. One single system that was able to detect both physical and social injuries, and then direct resources to respond to such injuries, would have proven to be an evolutionary advantage as opposed to having two separate systems. Recent evidence supports this claim; Eisenberger, Lieberman, and Williams (2003) found that excluded participants experienced increased activation of the dorsal anterior cingulate cortex (dACC) as well as the right ventral prefrontal cortex (rVPFC), and this was positively correlated with self-reported distress. Both neural regions are related to the experience and/or regulation of pain. The researchers interpreted their findings as evidence that the same neural substrates responsible for responding to physical pain are also implicated in the experience of social pain (for a discussion of contradictory evidence, see chapter "Research in Social Neuroscience: How Perceived Social Isolation, Ostracism, and Romantic Rejection Affect Our Brain").

In line with this work, Bernstein and Claypool (2012b) hypothesized that the severity of a social injury could moderate the consequences of social exclusion. The severity of a physical injury is related to the experienced pain, but the relationship is not linear. Relatively minor physical injuries (e.g., stubbing a toe) result in relatively

little experienced pain. Relatively more severe injuries (e.g., a broken finger) hurt considerably more. However, if the severity of a physical injury is so severe, the body does not experience a commensurate amount of physical pain but instead, an analgesic response occurs (in a protective fashion, much like DeWall & Baumeister, 2006, asserted; see for review, Kandel, Schwartz, & Jessell, 2000). Bernstein and Claypool (2012b) reasoned that severe social exclusions might result in numbing of physical pain while less severe exclusions would result in hypersensitivity, and indeed, in two studies, they found exactly that. When participants were excluded via Cyberball (a relatively low severity social injury), they experienced a hypersensitivity to physical pain, but individuals told they would live a life devoid of social connections (a highly severe social injury) experienced a numbing of physical pain (thus replicating DeWall and Baumeister's [2006] work showing exclusion numbs people to physical pain). When they directly manipulated exclusion's severity, they again found that high severity exclusions resulted in physical pain numbing while less severe exclusions resulted in hypersensitivity.

Conclusion

The consequences of short- and long-term social exclusion are numerous. Experimental social psychology has, and continues to thoroughly examine consequences to acute social exclusion, while consequences as a result of chronic exclusion are understood better through cross-sectional, longitudinal, and qualitative work. Broadly, researchers have classified responses to social exclusion as being prosocial, antisocial, or socially avoidant, and this classification generally fits well with the existing literature. A review of this work suggests that the question of how exclusion affects a person depends on a number of factors, some of which we understand and some of which remain open to question.

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Research in Social Neuroscience: How Perceived Social Isolation, Ostracism, and Romantic Rejection Affect Our Brain

Stephanie Cacioppo and John T. Cacioppo

Humans are fundamentally a social species, and social species by definition create stable organizations beyond the individual. These superorganismal structures evolved hand in hand with psychological, neural, hormonal, cellular, and genetic mechanisms because the consequent social behaviors helped these organisms survive, reproduce, and support their dependent offspring sufficiently well to leave a genetic legacy. Social neuroscience is the interdisciplinary field characterized by the study of healthy humans, patients, and animal models to investigate the neural, hormonal, cellular, and genomic mechanisms underlying social structures, processes, and behavior (J. T. Cacioppo & Cacioppo, 2013b). To investigate the importance of the social world on brain and biology, we adopted an approach common in the neurosciences: contrasting the effects of the presence of some variable in an organism (e.g., the orbito-frontal cortex) with the effects of the absence (or graded absence) of that variable. In our case, we have conducted cross-sectional, longitudinal, experimental, and animal research to investigate the effects of varying degrees of *perceived* social isolation. In addition, we discuss research on the neural correlates of ostracism and romantic rejection.

The Perceived Social Environment

Social exclusion has been defined broadly as the *experience* of being kept apart from others physically or emotionally (see chapter "Social Exclusion in Everyday Life"). Therefore, perceptions of social isolation, ostracism, and romantic rejection

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fall under the broad rubric of social exclusion. The basic premise underlying this work is that the brain is the key organ for forming, monitoring, maintaining, repairing, and replacing salutary connections with others (e.g., J. T. Cacioppo, Cacioppo, & Boomsma, 2014; S. Cacioppo, Capitanio, & Cacioppo, 2014). If a group objectively excludes a person, but the individual does not experience being socially excluded, the objective exclusion would not fall under the current definition of social exclusion. Consistent with the emphasis in social exclusion on the *experience* of being kept apart from others, the *perception* of social isolation, or what more colloquially has been termed loneliness (Weiss, 1973), has been shown to be conceptually, functionally, and stochastically distinct from objective social isolation (see reviews by J. T. Cacioppo, Cacioppo, Capitanio, & Cole, 2015; J. T. Cacioppo, Hawkley, & Berntson, 2003; S. Cacioppo et al., 2014).

For instance, loneliness and objective social isolation serve as independent risk factors for mortality (see review by Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015) through different transduction pathways and mechanisms (J. T. Cacioppo et al., 2015; S. Cacioppo et al., 2014). For example, in a U.S. nationally representative sample of 2101 adults aged 50 years and over from the 2002 to 2008 waves of the Health and Retirement Study, Luo, Hawkley, Waite, and Cacioppo (2012) estimated the effect of loneliness at one time point on mortality over the subsequent 6 years and investigated social relationships, health behaviors, and morbidity as potential mechanisms through which loneliness affects mortality risk among older Americans. Results indicated that loneliness was associated with increased mortality risk over a 6-year period. Importantly, the association between loneliness and mortality was *not* explained by objective social isolation or by health behaviors.

Methodological Approaches

The growth of social neuroscience over the past two decades has been fueled by technology and methods such as enzyme assays, electrical and functional neuroimaging, transcranial magnetic stimulation (TMS), and an array of methods from genetics and molecular biology in humans and animals (J. T. Cacioppo, Cacioppo, Dulawa, & Palmer, 2014). Brain imaging methods have been especially important in studies of social exclusion. With approximately 86 billion neurons working together in malleable networks to produce our mind, consciousness, and behavior (Azevedo et al., 2009), the scientific investigation of the human brain represents one of the most complex and exciting scientific frontiers in the twenty first century. Since Angelo Mosso's discovery of the "human circulation balance" in the nineteenth century (see Sandrone, Bacigaluppi, Galloni, & Martino, 2012, for review), significant neuroimaging developments and refinements have been made, for instance, in terms of neuroimaging power (e.g., from 1 to 3 or 7 T for functional magnetic resonance imaging, fMRI; from 32 electrodes to 64 and then to 128 electrodes or 256 electrodes for surface electroencephalography, EEG; S. Cacioppo & Cacioppo, 2015; Davidson & Cacioppo, 1992), computational capacities, analytic tools, and statistical approaches (multi-kernel density analyses, multi-voxel pattern

analyses, network modeling of brain connectivity, graph theoretical analyses; e.g., S. Cacioppo et al., 2013; S. Cacioppo & Cacioppo, in press). In addition to traditional physiological measures (e.g., facial electromyography, impedance cardiography and electrocardiography, eye-tracking, electrodermal activity; cf. Cacioppo, Tassinary, & Berntson, in press), contemporary neuroimaging techniques (e.g., positron emission tomography, PET; fMRI; EEG; event-related potentials, ERPs; magneto-encephalography, MEG; TMS; cf. S. Cacioppo & Cacioppo, in press) offer unprecedented access to the working social brain.

fMRI research on the acute effects of social exclusion on the brain suggests the involvement of multiple, functionally distinct brain mechanisms including neural mechanisms involved in social threat surveillance and aversion (e.g., amygdala, anterior insula, and the anterior cingulate cortex, see meta-analysis by S. Cacioppo et al., 2013), expectation violation (the anterior cingulate cortex; Somerville, Heatherton, & Kelley, 2006), and attention to one's self-preservation in a social context (e.g., orbito-frontal cortex, medial prefrontal cortex, superior temporal sulcus, and temporal parietal junction; Bickart, Hollenbeck, Barrett, & Dickerson, 2012; J. T. Cacioppo, Norris, Decety, Monteleone, & Nusbaum, 2009; S. Cacioppo et al., 2013; S. Cacioppo, Bangee, et al., 2015; S. Cacioppo, Balogh, & Cacioppo, 2015; Eisenberger & Cole, 2012; Klumpp, Angstadt, & Phan, 2012). Chester and Riva (chapter "Brain Mechanisms to Regulate Negative Reactions to Social Exclusion") have discussed the neural responses to social exclusion as reflecting automatic (e.g., anterior insula, dorsal anterior cingulate cortex) and controlled (ventral anterior cingulate cortex, ventrolateral prefrontal cortex) component processes.

One of the limitations in most fMRI studies is the reliance on small numbers of participants (given the cost of fMRI), and this is the case in many of the studies on acute social exclusion, as well. There is growing concern in science and medicine that statistically underpowered studies can lead to an exaggeration of true effect sizes, a high rate of false positives (relative to true positives), and a high rate of misses, as well as making it unlikely that true effects will be replicated (e.g., Button et al., 2013). It should not be surprising, therefore, that differences in the neural regions associated with social exclusion have been found across studies. Both misses and false alarms are important in studies of the neural correlates of social exclusion because each misrepresents the neural mechanisms underlying the information processing operations that are elicited by acute social exclusion. We discuss the results of two meta-analyses of this literature in a later section of this chapter to address in an objective, quantitative fashion the state of the literature regarding which specific brain regions have been identified in this literature.

Loneliness as a Case Study of Social Exclusion

In many contexts across human history, a chief threat to a person's reproductive success and survival has come from other humans. Loneliness—that is, the perception of being socially isolated—is not only unhappy; it signals danger across phylogeny (J. T. Cacioppo & Patrick, 2008; S. Cacioppo et al., 2014). The level of loneliness a

person feels at bedtime predicts sleep fragmentation and feelings of fatigue the next day (e.g., J. T. Cacioppo et al., 2002), loneliness is associated with anxiety and increased prepotent responding (i.e., decreased impulse control; cf. J. T. Cacioppo & Patrick, 2008), and loneliness increases the likelihood of implicit hypervigilance for social threats (e.g., S. Cacioppo, Balogh, et al., 2015) and decreased empathy (Beadle, Brown, Keady, Tranel, & Paradiso, 2012). Similarly, mice when housed in social isolation rather than in pairs show sleep disruptions and reduced slow wave sleep (Kaushal, Nair, Gozal, & Ramesh, 2012), prairie voles when isolated from their partner and subsequently placed in an open field show less exploratory behavior and more predator evasion (Grippo et al., 2014), and fish have evolved to swim to the middle of the group when predators approach (Ioannou, Guttal, & Couzin, 2012). For instance, schooling foraging fish form a dynamic baitball when attacked by predatory fish. The fish on the edge of the baitball are more likely to be attacked by predatory fish, not because they are the slowest or weakest, but because it is easier to isolate and prey upon those on the social perimeter (Ioannou et al., 2012).

These findings in human and nonhuman social animals reflect a general principle—that the perceived absence of mutual aid and protection increases behavioral, neural, neuroendocrine, and genomic responses that promote short-term self-preservation. Among the range of neural and behavioral effects of loneliness documented in human adults, for instance, are an increased implicit vigilance for social threats along with increased anxiety, hostility, and social withdrawal; increased sleep fragmentation and daytime fatigue; increased vascular resistance; altered gene expression and decreased viral immunity; decreased impulse control in favor of responses highest in the response hierarchy (i.e., prepotent responding); increased negativity and depressive symptomatology; increased age-related cognitive decline and risk of dementia; and increased hypothalamic pituitary adrenocortical (HPA) activity and cortisol levels (cf. J. T. Cacioppo et al., 2015; Cole et al., 2015). For instance, longitudinal research has shown that the morning rise in cortisol is predicted uniquely by the loneliness the participant felt the previous night (Adam, Hawkley, Kudielka, & Cacioppo, 2006).

Experimental research using animal models have demonstrated that HPA activation for experimentally isolated animals—just as for humans—is not an inevitable consequence of objective social isolation but depends on the organization of the brain and the nature of the relationship of the animal to the conspecific with whom it is separated. For example, following 1 h of social isolation from their pair mates, the monogamous titi monkeys (for whom behavioral assessment has shown partner preference is high) show a significant increase in plasma cortisol whereas the squirrel monkeys (for whom behavioral assessment has shown partner preference is relatively low) do not (Mendoza & Mason, 1986). By contrast, the squirrel monkey mothers show significant increases in HPA activation when separated from their infant (for whom behavioral assessment has shown pair preference is high), while the titi monkeys (for whom behavioral assessment has shown pair preference is relatively low) do *not* (e.g., Mendoza & Mason, 1986; for review see S. Cacioppo et al., 2014).

Our evolutionary model posits that feeling socially isolated (or on the social perimeter) leads to increased attention and surveillance of potential threats from the

social world and an unwitting focus on self-preservation (e.g., J. T. Cacioppo, Cacioppo & Boomsma, 2014; Goossens et al., 2015). Two corollaries are noteworthy here. First, and as noted above, the brain is posited to be the central organ for forming, monitoring, maintaining, repairing, and replacing salutary connections with others. This is true for humans, and it should be true for many other species for which sociality has been a central feature of life for millions of years. The removal of mutual protection and assistance through social exclusion, therefore, should affect brain structures and/or functions and produce biological and behavioral effects in nonhuman animals, perhaps especially those closest in terms of phylogeny.

Second, early research on loneliness emphasized the importance of attributional reasoning, with loneliness posited to result from the discrepancy between the interpersonal interactions that are desired and those that are achieved (Peplau, Russell, & Heim, 1979). If there are deep evolutionary roots tilting the human brain and biology toward short-term self-preservation when an individual feels lonely, then part of what is triggered when individuals feel lonely should be nonconscious. For instance, loneliness increases the *explicit* desire to connect with others but it also appears to produce an *implicit* hypervigilance for social threats (cf. J. T. Cacioppo, Cacioppo & Boomsma, 2014; S. Cacioppo, Balogh, et al., 2015; S. Cacioppo, Bangee, et al., 2015)—perhaps an adaptation of the predator evasion and aggressiveness documented previously in socially isolated rodents (Hofer, 2009; Kaushal et al., 2012). This implicit priming for social threats, in turn, can lead to attentional, confirmatory, and memory biases that lead an individual to think and act toward others in a more negative fashion, which in turn can increase negative interactions with others (e.g., Duck, Pond, & Leatham, 1994; Rotenberg, 1994; Rotenberg, Gruman, & Ariganello, 2002). The implicit priming for social threats can also fuel loneliness (S. Cacioppo et al., 2014; Lau & Gruen, 1992; Rotenberg & Kmill, 1992) and spread across a social network (J. T. Cacioppo, Fowler, & Christakis, 2009). All these effects can occur while leaving the lonely individual feeling as if he or she had little or no responsibility for the hostile interactions with others (see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion" for additional discussion of nonconscious responses to social exclusion).

There is behavioral and neural evidence that loneliness increases attention to negative social stimuli (e.g., social threats). Lonely, compared to nonlonely, individuals worry more about being evaluated negatively and feel more threatened in social situations (even when they are not more likely to be rejected; Jones, Freemon, & Goswick, 1981), and these differences are found when loneliness is measured across individuals or is manipulated experimentally (e.g., through hypnotic inductions; J. T. Cacioppo et al., 2006). The effects of loneliness on attention to potential social threats appear to be largely *implicit*. Using a modified emotional Stroop task, lonely participants, relative to nonlonely participants, show greater Stroop interference for negative social, relative to negative nonsocial, words (see review by J. T. Cacioppo & Hawkley, 2009). Stroop interference is used to gauge the implicit processing of stimuli, so these results suggest that loneliness is associated with a heightened accessibility of negative social information. Consistent with this reasoning, Yamada and Decety (2009) investigated the effects of subliminal priming on

the detection of painful facial expressions and found that lonely individuals are more sensitive to the presence of pain in dislikable faces than are nonlonely individuals. Moreover, Riva, Williams, and Gallucci (2014) found that people high in fear of social threats perceived social exclusion as more painful.

Neural Correlates of Social Exclusion: Loneliness as a Model

The hypothesis that loneliness heightens the implicit attention to negative social, in contrast to nonsocial, stimuli has been tested in electrical neuroimaging studies. S. Cacioppo, Balogh, et al. (2015) used high-performance electrical neuroimaging and a social Stroop interference task to test the hypothesis that implicit attention to negative social, in contrast to nonsocial, words in the Stroop task differs between individuals high versus low in loneliness. Results revealed that negative social stimuli are differentiated from negative nonsocial stimuli more quickly in the lonely brain (~280 ms) than the nonlonely brain (~490 ms). Given the emergence of this microstate within 280 ms in the lonely brain and the fact that participants were performing a Stroop task, these results also suggest implicit rather than explicit attentional differences between lonely and nonlonely individuals.

In a conceptual replication, S. Cacioppo, Bangee, et al. (2015) used high-performance electrical neuroimaging and a behavioral task including social and nonsocial threat (and neutral) photographs from the International Affective Picture System (Lang, Bradley, & Cuthbert, 2008) to investigate the brain dynamics of implicit processing for social threat versus nonsocial threat stimuli in lonely participants, compared to nonlonely participants. Results revealed that social threat images are differentiated from nonsocial threat stimuli more quickly in the lonely (~116 ms after stimulus onset) than nonlonely (~252 ms after stimulus onset) brains, again suggesting that these are implicit rather than explicit attentional differences.

The extant research using fMRI also bears on how social exclusion manifests in the normal, human brain. In an fMRI study, lonely and nonlonely participants were exposed to pleasant or unpleasant social or nonsocial images (J. T. Cacioppo, Norris, et al., 2009). Activation of the visual cortex to the presentation of unpleasant social, in contrast to nonsocial, pictures was directly related to the loneliness of the participant, indicative of greater visual attention to the negative social stimuli (J. T. Cacioppo, Norris, et al., 2009). Despite the greater attention given to negative social stimuli, lonely, in contrast to nonlonely, individuals may be more likely to focus on their own short-term self-preservation in negative social circumstances. Consistent with this notion, activation in the temporo-parietal junction (TPJ)—a region that has been found previously to be activated in theory of mind tasks and in tasks in which individuals take the perspective of another—was inversely related to the loneliness of the participant when they viewed unpleasant pictures of people versus objects.

Recent research suggests that loneliness is related to appetitive social information processing, as well. The ventral striatum, a key component of the mesolimbic dopamine system, is rich in dopaminergic neurons and is critical in reward processing and

learning (Delgado, Miller, Inati, & Phelps, 2005; O'Doherty, 2004). The ventral striatum is activated by primary rewards such as stimulant drugs (Leyton, 2007), abstinence-induced cravings for primary rewards (Wang et al., 2007), and secondary rewards such as money (Seymour, Daw, Dayan, Singer, & Dolan, 2007). Evidence that social reward also activates the ventral striatum has begun to accumulate in studies of romantic love (Aron et al., 2005; S. Cacioppo, Bianchi-Demicheli, Frum, Pfaus, & Lewis, 2012), social cooperation (Rilling et al., 2002), social comparison (Fliessbach et al., 2007), and punitive altruism (De Quervain et al., 2004). J. T. Cacioppo, Norris, et al. (2009) investigated how an individual's loneliness was related to the differential activation of the ventral striatum to pleasant social versus matched nonsocial images. Lonely individuals showed less activation of the ventral striatum to pleasant pictures of people than to equally pleasant pictures of objects, whereas nonlonely individuals showed stronger activation of the ventral striatum when exposed to pleasant pictures of people than of objects. These neuroimaging results are consistent with the behavioral results in a previous study showing that lonely and nonlonely undergraduates were equally likely to experience positive interactions but these interactions were rated as less pleasant by lonely than nonlonely students (Cacioppo et al., 2000). Together, these studies suggest that loneliness reduces the joy people feel when engaged in positive social interactions.

Using fMRI, Powers, Wagner, Norris, and Heatherton (2013) investigated the effects of expecting loneliness in future life on the neural response to positive or negative social scenes. Following a personality survey, participants received feedback that was putatively based on their answers to the survey. In reality, participants were randomly assigned to receive one of two conditions. Half of the participants were told their future lives would be isolated and lonely (social exclusion), whereas the other half were told that their lives would be filled with long-lasting, stable relationships (social inclusion). All participants also received Barnum statements (personality feedback typically believed by the average person) to increase the credibility of the experimental manipulation. Participants then were scanned while viewing pictorial stimuli that varied in valence and sociality. Results indicated that a region of the dorsomedial prefrontal cortex (dmPFC) previously shown to be involved in mentalizing (i.e., thinking about the mental states of other individuals) was less active in participants in the social exclusion condition than in participants in the social inclusion condition when viewing negative social scenes. Moreover, the dmPFC activity in participants in the social exclusion condition was least active in response to negative social scenes, intermediate to neutral social scenes, and most active in response to positive social scenes—as would be expected if the manipulation of social exclusion increased the motivation for self-preservation.

One study to date has examined the association between loneliness and brain size. In a study of 108 health adults, Kanai, Bahrami, Duchaine, et al. (2012) reported that loneliness was correlated negatively with gray matter density in the left posterior superior temporal sulcus (pSTS), an area involved in biological motion and social perception. Kanai, Bahrami, Roylance, and Rees (2012) previously had demonstrated that the smaller the size of a participant's online social network, the smaller the pSTS, middle temporal gyrus, and entorhinal cortex, brain regions

involved in social perception and associative memory. Kanai, Bahrami, Duchaine, et al. (2012) examined whether the association between loneliness and pSTS size could be explained by social network size (an index of objective social isolation), empathy, or anxiety. Results showed that factoring out these variables did not change the correlation between loneliness and pSTS size. Moreover, and consistent with the notion that loneliness is related to differences in social *perception* rather than social contact, Kanai, Bahrami, Duchaine, et al. found that loneliness and pSTS size were related to poorer performance on gaze perception, and gaze perception performance mediated the association between loneliness and pSTS.

Neural Correlates of Social Exclusion: Ostracism and Romantic Rejection as Models

The neural correlates of ostracism and romantic rejection have also been investigated. Eisenberger, Liberman, and Williams (2003) published the first neuroimaging study of ostracism (as operationalized in a Cyberball task; see chapter "Methods for Investigating Social Exclusion") in a sample of 13 participants, showing that ostracism led to increased activity in the dorsal anterior cingulate cortex (dACC)—the posterior portion of the ACC that has been associated with a variety of processes including attention, error detection, physical pain, and conflict monitoring; the insula—a part of the cerebral cortex that is folded deep within the lateral sulcus and is involved in a variety of processes including interoception, emotional salience, the conscious representation of the body, and self-awareness; and the right ventral prefrontal cortex (vPFC)—the lower portion of the prefrontal cortex that has been implicated in processes such as fear, risk, and emotional regulation. These results were interpreted as evidence that social exclusion operates on the pain matrix to produce social pain (Eisenberger et al., 2003; see also Eisenberger, 2012, and chapter "Brain Mechanisms to Regulate Negative Reactions to Social Exclusion").

Contrarian views have been espoused, such as Somerville et al. (2006) whose results were interpreted in terms of expectancy violation rather than social pain. Two subsequent studies have produced results that were inconsistent with this expectancy violation interpretation, however (e.g., Cooper, Dunne, Furey, & O'Doherty, 2014; Kawamoto et al., 2012). As we noted above, many fMRI studies of social exclusion were characterized by small sample sizes, which can lead to unreliable effects (Button et al., 2013).

A meta-analysis based on a statistical multi-level kernel density analysis (MKDA) of Cyberball neuroimaging studies with 244 participants failed to support the claim that ostracism operates on the same pain matrix as nociceptive stimuli (S. Cacioppo et al., 2013). More precisely, the results revealed three main areas were reliably recruited when a participant felt ostracized by strangers in the Cyberball task: The anterior insula (bilaterally), the left ACC, and the left inferior orbito-frontal cortex—the region of the prefrontal cortex behind the eyes that has been implicated in adaptive learning, the representation of value, the expectation of

rewards or punishments of an action in a given situation, and social behavior. To our surprise, the dACC, which has been identified as a core region in both theoretical analyses and narrative reviews of this literature, did not emerge in this analysis. To investigate further, we eliminated the minimum cluster size (15) for a region to be considered. Results revealed little support across these studies for the region of the dACC associated with physical pain being activated by ostracism: 12 voxels were activated in the medial frontal gyrus, and only one voxel was activated in the left dACC (S. Cacioppo et al., 2013).

The MKDA of the neuroimaging studies was repeated for studies in which participants relived a romantic rejection to test whether the pain matrix was activated if the social exclusion were more meaningful. Results again failed to support the notion that social exclusion activates the same neural matrix identified in studies of physical pain. Reliving an unwanted breakup revealed four main brain areas that were reliably recruited: the right anterior insula, the right ACC, the left inferior orbito-frontal cortex (described above), and the right caudate nucleus—a part of the basal ganglia that is implicated in aspects of spatial memory, the integration of spatial information with the formulation of motor behavior, the speed and accuracy of voluntary movements, executive functioning, and approach-related emotions and behavior. Although more research with larger sample sizes is needed to clarify this literature, the region of the anterior cingulate that was identified as activated reliably in our meta-analysis is in line with Somerville et al.'s (2006) results and suggestion that social exclusion is unexpected and operates on attentional mechanisms, particularly those involved in expectancy violation.

In another meta-analysis, Rotge et al. (2015) focused exclusively on the ACC, dividing it into four general regions. The ventral region of the ACC, which classically was divided into the subgenual ACC (sgACC) and the pregenual ACC (pgACC), and the dorsal region of the ACC, which was divided into the anterior midcingulate cortex (aMCC) and the posterior midcingulate cortex (pMCC). The meta-analysis included 940 participants in 46 studies of a wide variety of forms of social exclusion, including ostracism, bereavement, romantic rejection, social negative evaluation, rejection, and unreciprocated cooperation. The results indicated that: (a) social exclusion conditions were associated with activity in the sgACC, pgACC, and aMCC regions; (b) the negative feelings elicited by the social exclusion conditions were similarly related to activity in the sgACC, pgACC, and aMCC regions; (c) the likelihood of activation within these regions was higher in children than adults; (d) the likelihood of activation within these subregions of the ACC varied across different social exclusion tasks; and (e) ostracism (as operationalized in the Cyberball task) was associated with less activation in the aMCC region than other experimental social exclusion tasks.

It is important to note, however, that the studies selected for inclusion in this meta-analysis were *not* selected based on the specific task that was used to study social exclusion (e.g., Cyberball, viewing rejection images), but rather among the inclusion criteria for the studies used in this meta-analysis were: (a) the use of "an experimental task exploring social pain," and (b) "reported significant functional changes within the ACC" (Rotge et al., 2015, p. 20). Of the 159 fMRI studies that

were identified in the literature search using the keywords "Cyberball," "social exclusion," "social rejection," "ostracism," "social negative evaluation," "social feedback," "evaluative threat," "disapproving faces," "romantic rejection," "bereavement," and "social pain," only 59 studies (37 %) met the inclusion criterion of social pain as experimental condition, and of this subset 55 reported ACC activation in whole-brain analyses. It is unknown whether the neural correlates identified in the meta-analysis of these 55 studies would generalize to a meta-analysis of the 104 fMRI studies of social exclusion that were not included.

Overall the results suggest that there is presently insufficient neuroimaging evidence to conclude with confidence that ostracism (as measured with a Cyberball task) operates on the pain matrix, and they raise the possibility that the neural correlates of social exclusion are different and more complex than previously thought (S. Cacioppo et al., 2013; see also chapter "Brain Mechanisms to Regulate Negative Reactions to Social Exclusion" for a review of the brain mechanisms underlying the component processes of emotion regulation in response to social exclusion).

In 2014, Woo and colleagues also challenged the assumption that romantic rejection and physical pain share common neural mechanisms, and identified specific multivariate fMRI patterns unique to pain and romantic rejection, respectively. In their first fMRI study, Woo et al. recorded brain activity from 60 participants while they experienced physical pain (via administration of painful heat; "Heat-pain" condition) or warm heat ("Warmth" condition) to their left volar forearm and romantic rejection (via the viewing of a headshot photograph of their ex-partner; "Ex-partner" condition) or positive feelings (via the viewing of a headshot photograph of a close friend; "Friend" condition) on separate trials. All participants had recently experienced an unwanted breakup with their romantic partners and felt intensely rejected—a procedure used previously in the fMRI studies of romantic rejection reviewed previously. To test whether common or distinct brain networks underlie the component processes of physical and social pain, Woo et al. (2014) first performed a whole-brain fMRI multivariate pattern analysis. fMRI pattern classifiers discriminate pain and rejection from their respective control conditions in out-of-sample individuals with 92 and 80 % accuracy. Results showed that romantic rejection and physical pain were associated with different patterns of regional brain activation. Furthermore, a multi-voxel pattern similarity analysis revealed that physical pain- and romantic rejection-related patterns included significantly different weights in some of the known targets of ascending nociceptive pathways, including dorsal posterior insula, thalamus, and periaqueductal gray, but not others (e.g., the dACC).

In addition to this analysis at the whole-brain level, Woo et al. (2014) performed resting-state connectivity analyses on a separate sample (Study 2, $N=91$) that revealed that physical pain- and romantic rejection-related representations were uncorrelated within regions thought to encode pain affect (e.g., the dACC) and showed distinct functional connectivity with other regions in a separate resting-state data set. These findings question the proposition that social pain co-opted the physical pain system, with independent representations co-localized in similar gross anatomical regions (Woo et al., 2014). According to Woo et al., "rather than co-opting pain circuitry, rejection involves distinct affective representations in humans" (Woo et al., 2014, Abstract).

The idea of a unique network sustaining the component processes underlying romantic rejection is consistent with fMRI studies that showed that romantic rejection (as re-experienced via the viewing of the image of the participants' rejecting beloved) activates a specific brain network within areas associated with gains and losses, craving, and emotion regulation (ventral tegmental area bilaterally, ventral striatum, medial and lateral orbito-frontal/prefrontal cortex, and cingulate gyrus; Fisher, Brown, Aron, Strong, & Mashek, 2010). In a study with 20 women, Gillath, Bunge, Shaver, Wendelken, and Mikulincer (2005) showed that when participants thought about negative relationship scenarios (conflict, breakup, death of partner), their level of attachment anxiety was inversely correlated with activation in the orbito-frontal cortex. The authors interpreted these results as suggesting that "anxious people react more strongly than non-anxious people to thoughts of loss while under-recruiting brain regions normally used to downregulate negative emotions" (Gillath et al., 2005, p. 835). Participants high on avoidance failed to show as much deactivation as less avoidant participants in two brain regions (cingulate cortex; lateral prefrontal cortex), suggesting a less efficient suppression in avoidant individuals (Gillath et al., 2005).

It is possible that the task in fMRI studies for studying romantic rejection (e.g., being reminded of a past romantic rejection) activates other brain regions than the task in fMRI studies for studying ostracism (e.g., Cyberball), but fMRI results from both of these literatures have been inconsistent (possibly due in part to small sample sizes) and the notion that social pain and physical pain share a common neural substrate has been espoused in both literatures. Research with larger sample sizes is needed that controls for differences in the tasks used to investigate physical pain and social exclusion, such as temporal perspective, sensorimotor processes, and memory. However, the quantitative analysis of work in both literatures to date has underscored the fact that whether, the extent to which, or the conditions under which social exclusion co-opts the physical pain circuitry has yet to be determined.

Conclusion

Over the past few decades, significant technological advances have led to the development of new methods and theories of the social brain. These developments have both transformed the nature and amount of data available on brain structure and function at various scales, and expanded the breadth of theories of the social brain. We have focused primarily on three cases of experienced social exclusion: loneliness typically through studies of the normal variations in perceived isolation in response to social circumstances, acute ostracism typically through the experimental task of Cyberball, and romantic rejection typically through memories of a recent breakup. In general, research on the neural correlates of loneliness are consistent with a neural shift toward processes that serve self-preservation, the research on the neural correlates of ostracism are partially consistent with expectancy violation, emotional dysregulation, or, possibly, pain processing, and the research on the neural correlates of romantic rejection are partially consistent with expectancy

violation, lingering attachment, emotional dysregulation, or, possibly, pain processing. Although current research suggests that the neural correlates vary for these three forms of social exclusion, this is still an open question due to methodological and statistical issues in the field. Additional research that addresses these issues is needed to determine what are the unique and common neural substrates across various forms of social exclusion.

Given the small sample size in most functional neuroimaging research, it should not be surprising that questions remain about the neural correlates and neural mechanisms underlying social exclusion generally and specific types of social exclusion in particular. Due to low statistical power in individual studies, small but theoretically important effects are likely to go undetected and false positives are to be expected. These statistical conditions suggest that a young literature is likely to provide at best an incomplete and at worst a misleading depiction of neural correlates, and the neuroscience of social exclusion is no exception.

Progress toward the specification of the neural correlates of and mechanisms underlying social exclusion would be promoted by a greater reliance on quantitative than narrative reviews. For instance, meta-analyses focused on different aspects or moderators of the neural correlates of social exclusion may help determine important questions that require additional empirical attention. Moreover, the value of meta-analyses would be enhanced by a change in the information that is provided in empirical studies of the neural correlates of social exclusion. Rather than treating an arbitrary cutoff such as $p < .05$ as evidence for the presence or absence of a true effect, statistical significance testing could be treated as a method to determine the likelihood that a given test result would be expected by chance. The current win/lose approach to statistical significance testing has promoted the notion that a successful replication means a previously significant effect is found to again be statistically significant in a replication study. Science is a cumulative process, however. A more productive approach may be to view an initially statistically significant effect as meaning that the confidence interval for this effect in the original study does not include zero, and a successful replication as meaning that the effect size detected in the follow-up study falls *within* the confidence interval of the original study. The effect size that is detected in the replication study may or may not differ from zero (i.e., reach $p < .05$) depending on the sample size of and error variance in the replication study. If the effect size in the replication falls within this confidence interval, it does not mean that the effect size reported in the original study is true, but only that the original result was replicated. The best estimate of the true effect size is the weighted mean of each of the studies, as it is done in a meta-analysis. Note, too, that meta-analyses of a generally underpowered literature are more informative when the analysis is not limited to statistically significant results but includes information about results of small to moderate effect sizes, as well. If this information were provided, perhaps in appendices or easily retrievable supplementary materials in future research reports, subsequent meta-analyses of the literature would help address both Type I and Type II errors and improve the reliable specification of the neural correlates of social exclusion.

Meta-analyses speak to the strength of associations, but to be able to draw causal interpretation about the link between neurobiology and social exclusion,

other methods, such as lesion studies, transcranial magnetic stimulation, and pharmacological interventions in human or nonhuman animals are needed (cf. Sarter, Berntson, & Cacioppo, 1996; see also chapter "Brain Mechanisms to Regulate Negative Reactions to Social Exclusion"). Such studies allow researchers to elucidate the causal role of any given neural structure, circuit, or process in a given task. Any single neuroimaging methodology only provides a partial view of brain activity within a very limited range of spatial and temporal levels, and it is the confluence of methods that advances our understanding of the neural mechanisms underlying social and cognitive behaviors.

In sum, social exclusion is important and interesting in part because it is so multifarious. The multi-determined nature of social exclusion calls for the parsing of big research questions into smaller, tractable series of research questions that ultimately constitute systematic and meticulous programs of research (S. Cacioppo & Cacioppo, in press). Studies of the neural mechanisms underlying social exclusion (in its various forms) should provide data that help identify distinct and common operations and mechanisms, but even these mechanisms may vary as a function of social context (cf. J. T. Cacioppo & Cacioppo, 2013ab). Where to parse a phenomenon may not be obvious without empirical evidence, however, so the question of what are the neural mechanisms underlying social exclusion are not likely to be answered definitively in the near future. Nevertheless, consideration of the issues raised in this chapter may help avoid unnecessary detours in route to the answer.

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Research in Developmental Psychology: Social Exclusion Among Children and Adolescents

Laura Elenbaas and Melanie Killen

Social exclusion is a common experience in social life, and it begins in childhood. Persistent or prolonged experiences of exclusion in childhood are related to long-term negative consequences, such as depression, social withdrawal, and anxiety (Bierman, 2004; Rubin, Bukowski, & Parker, 2006). When children withdraw from social interactions and social relationships, a negative cycle ensues, because positive social experiences in childhood are important for healthy emotional wellbeing, academic success, and productive work experiences in adulthood (Buhs & Ladd, 2001; Coie, Terry, Lenox, & Lochman, 1995; DeRosier, Kupersmidt, & Patterson, 1994; Prinstein & Aikins, 2004). Most developmental research on interpersonal peer exclusion has documented how patterns of victimization and bullying behavior reflect individual differences in temperament, attachment, confidence, and social-cognitive skills like intention attribution (e.g., Gunnar, Sebanc, Tout, Donzella, & van Dulmen, 2003; Masten et al., 2009). For example, children who are extremely shy, fearful, and wary are more vulnerable to victimization, whereas children who are highly externalizing are at risk for becoming bullies (Hodges, Boivin, Vitaro, & Bukowski, 1999; Olweus, 1993; Rubin et al., 2006).

Recently, Killen, Mulvey, and Hitti (2013) differentiated *interpersonal* peer exclusion from *intergroup* social exclusion in childhood. This distinction has been well charted in social psychology research with adults (Abrams, Hogg, & Marques, 2005), but has only been extensively documented in the past decade from a developmental perspective. Intergroup social exclusion is a highly salient form of peer exclusion based on group membership, such as gender, race, ethnicity, sexual orientation, or culture (Killen & Rutland, 2011; Rutland, Killen, & Abrams, 2010). That is, there are times in children's and adolescents' lives when the source of exclusion lies with prejudicial attitudes about group membership rather than with individual

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differences in personality traits that contribute to negative interpersonal relation-ships. Prejudicial attitudes are often designed to maintain social hierarchies, status, and power, and are prevalent throughout childhood and into adulthood (Killen, Mulvey, & Hitti, 2015). Processes examined from an intergroup perspective include group identity, in-group bias, out-group threat, and stereotypic associations about traits assigned to members of groups (Dovidio, Glick, & Rudman, 2005).

One of the most compelling distinctions between interpersonal peer exclusion and intergroup social exclusion pertains to the relevant form of intervention to improve developmental outcomes. The causes of interpersonal social exclusion (e.g., aggression) are often exacerbated by the experience of exclusion, creating a cycle of victimization (Dodge et al., 2003; Ladd, 2006). Similarly, socially with-drawn children's experiences of loneliness are often explained by their experiences of exclusion by peers (Boivin, Hymel, & Burkowski, 1995). For excluded children, even one stable best friendship results in better mental health in adulthood (Bagwell, Newcomb, & Bukowski, 1998). Through interventions, victimizers and victims can learn social skills, such as reading social cues better (victimizers) and being more confident (victims), gaining social competence and resilience (Bierman, 2004; Rubin et al., 2006).

By contrast, intervention programs for intergroup social exclusion are targeted at awareness for all children, and particularly for the high status groups that are often more likely to hold prejudicial attitudes (Abrams & Killen, 2014; Rutland & Killen, 2015). The percentage of children who are at risk for exclusion based on personality traits is approximately 10–15 %. By contrast, the percentage of children who are at risk for becoming the target of prejudicial attitudes can be much higher, depending on the type of prejudicial attitude that perpetuates intergroup exclusion. While research on interpersonal exclusion is extremely important for understanding indi-vidual differences in vulnerability to victimization, exclusion of a peer on the basis of personality (e.g., shyness) is different from exclusion of a peer on the basis of group membership (e.g., gender). Complementing research on interpersonal peer exclusion, research on intergroup social exclusion is designed to understand the origins of prejudice and the roles that group identity, group norms, and group dynamics play for fostering or inhibiting discrimination and social exclusion.

In this chapter, we focus primarily on intergroup social exclusion, given the extensive treatment of interpersonal peer exclusion that already exists in literature in both developmental and social psychology. Intergroup social exclusion involves processes different from those involved in interpersonal peer exclusion, but results in some of the same long-term negative developmental outcomes such as depres-sion, distress, and anxiety (Brown, Bigler, & Chu, 2010; Fisher, Wallace, & Fenton, 2000). In fact, the urgency of research on intergroup social exclusion has been made clear by research on the negative outcomes of discrimination and bias, which reveals a host of physiological distress signals (Neblett, White, Philip, Nguyên, & Sellers, 2008; Seaton & Yip, 2009; Yip & Douglass, 2011).

Cultural beliefs about status, stereotypes based on group membership, and exclu-sive intergroup attitudes have been examined extensively in adult populations for more than 50 years (Dovidio et al., 2005; Dovidio, Hewstone, Glick, & Estes, 2010).

Yet prejudice, stereotyping, and exclusion emerge in childhood and develop into adolescence (Killen et al., 2015). In fact, expectations about groups' relative power and status are reflected in children's peer interactions from as early as the preschool years (Bigler & Liben, 2006; Elenbaas & Killen, in press; Rutland et al., 2010). Intergroup social exclusion has been widely documented in countries around the world, and is disproportionally experienced by children and adolescents from cultural minority groups (Killen & Rutland, 2011; Møller & Tenenbaum, 2011; Nesdale, 2004; Verkuyten, 2008). As intergroup social exclusion emerges in childhood, it is essential to understand why, and under what circumstances, children and adolescents in countries around the world exclude peers on the basis of group membership.

One of the significant developmental processes that enables children and adults to be inclusive, rather than exclusive, is the emergence of conceptions of fairness, justice, and rights. That is, children's moral concepts of fairness and equality are early-emerging (Killen & Smetana, 2015), and while children seek affiliation with in-groups, they also form notions of fair and equal treatment of others regardless of group membership. These moral concerns impact children's and adolescents' evaluations of social exclusion. Further, developing conceptions of discrimination and rights promote inclusion in development, and local and group norms can combat exclusion through promotion of tolerance and equal opportunity (Hitti & Killen, 2015; Horn & Szalach, 2009). Thus, in this chapter, we review not only how children perpetuate social exclusionary attitudes, but also how they challenge and resist such tendencies, concluding with the implications of this work for promoting equality throughout development.

Intergroup Social Exclusion in Childhood and Adolescence

Social group affiliations change across the lifespan as individuals experience different degrees of salience for their various group memberships, and vary by context as children and adolescents receive different messages about group affiliation (Edmonds & Killen, 2009; Yip, 2014). However, from an early age, children construct notions of groups' relative status, and use stereotypes to justify excluding peers from lower-status groups. In this section, we review research on how children's stereotypes and adherence to group norms bear on their decisions to exclude peers from groups, and review the complex roles of group identity and prejudice in social exclusion during development.

Stereotypes and Denial of Opportunity

Children's use of stereotypes to determine who should or should not be included in social groups may deny peers who do not fit such stereotypes the opportunity to engage in group activities. For example, preschoolers have been shown to use

gender stereotypes to determine whether a boy or a girl should be allowed to join a group of peers playing with dolls or playing with trucks (Killen, Pisacane, Lee-Kim, & Ardila-Rey, 2001; Theimer, Killen, & Stangor, 2001). Young children in these studies often referenced gender stereotypes about who would be better at the given activity to justify exclusion (e.g., "girls don't like playing with trucks"). This first example illustrates how early stereotypes about individuals based on their group membership emerge. Beginning in early childhood, children start to exclude others who do not adhere to social expectations.

Over time, excluded children may be denied opportunities of increasing importance because of assumptions about who "fits" with a given group. For example, one recent study found that non-Arab-American adolescents made stereotypic assumptions that a group of Arab-American peers would choose new friends on the basis of ethnic match, even as they asserted that a non-Arab-American group would be inclusive, choosing new friends based on a match of hobbies and activity preferences and ignoring ethnicity (Hitti & Killen, 2015; see Fig. 1 for a depiction of stimuli used in this study). Further, adolescents who held stereotypes about Arab-Americans were less likely to opt to include an Arab-American peer into their own social group, demonstrating how negative messages about stigmatized social groups perpetuate exclusive attitudes and behaviors.

Stereotypes about group similarities and differences, like these, are pervasive throughout childhood and adolescence. Related work has even shown that European-American children perceive two African-American peers with different hobbies to be more alike than two European-American peers with different hobbies (McGlothlin, Killen, & Edmonds, 2005). Thus, in addition to creating exclusive attitudes and barriers for friendships across group boundaries, stereotypes impact adolescents' expectations for out-group members' preferences and social behavior, leading to the perpetuation of misunderstanding and distrust.

Norms and Exclusion

In addition to stereotypic expectations about individuals based on their group membership, larger social norms and unique group norms influence children's decisions about exclusion, particularly in later childhood and adolescence. For example, older children often expect negative outcomes for those who deviate from gender norms about appropriate activities for males and females. One recent study found that older children and early adolescents personally supported individuals' decisions to challenge groups' gender stereotypic activity preferences by suggesting that the group try a non-stereotypic activity (e.g., a girl in an all-girls group that always does ballet suggests that the group play football instead). However, they expected that individuals who advocated for such changes, especially boys who expressed interest in gender non-stereotypic activities (e.g., ballet), would not be well received by their groups, and would likely be excluded (Mulvey & Killen, 2015; see Fig. 2).
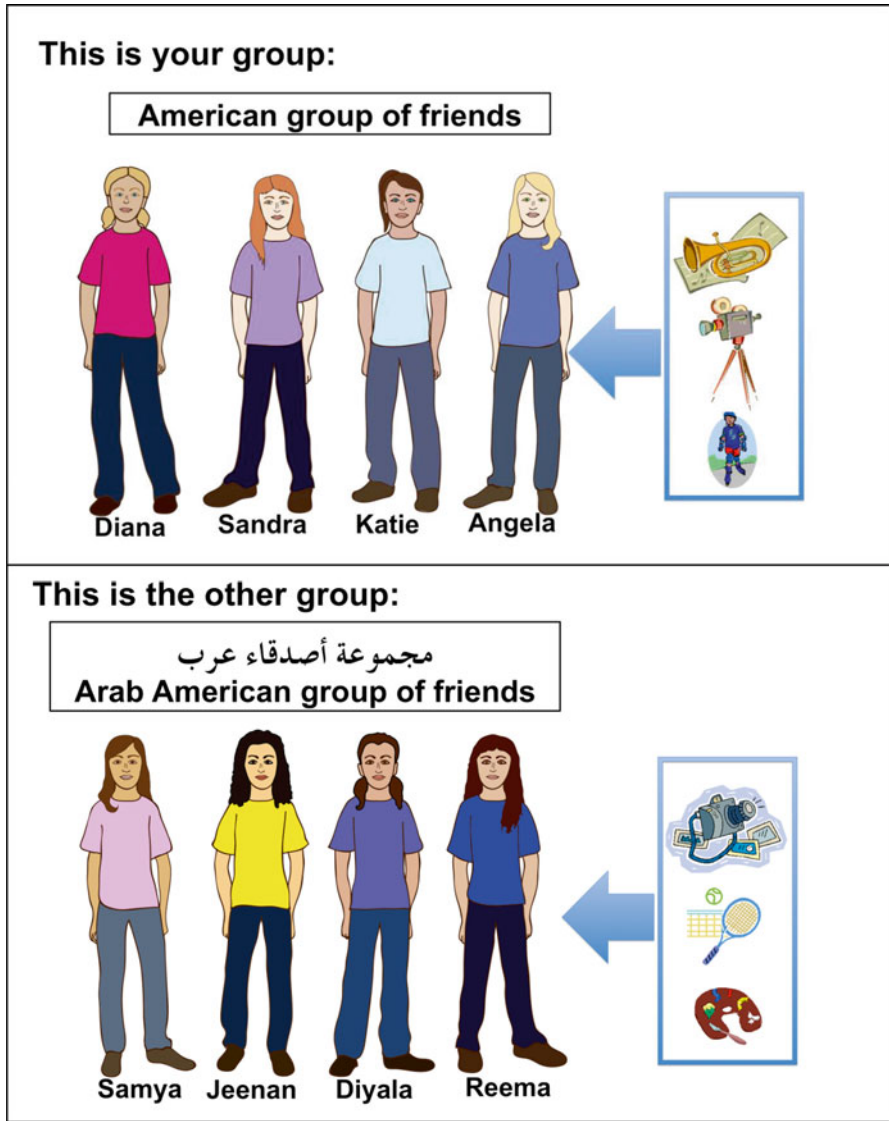
This is your group:

American group of friends

Diana   Sandra   Katie   Angela

This is the other group:

مجموعة أصدقاء عرب

Arab American group of friends

Samya   Jeenan   Diyala   Reema

Fig. 1 Ethnic peer groups as depicted in the female protocol, originally published in Hitti and Killen (2015: fig. 1) (reprinted by permission of the publisher), © 2010, Joan Tycko, illustrator

Further illustrating how social hierarchies are established and enforced in development, adolescents have been found to judge both straight and gay peers who engage in gender non-conforming activities and appearance as less acceptable than gender conforming peers, and males, ranked higher on the gender hierarchy, rate other straight males who are gender-non-conforming as least acceptable
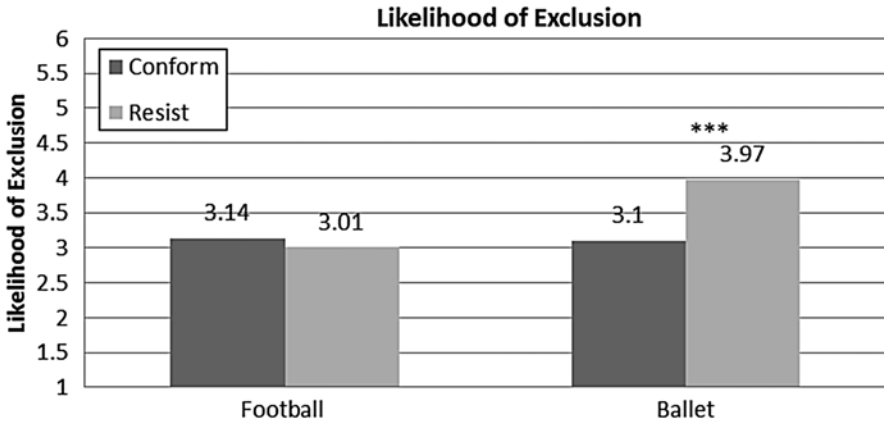
Fig. 2 Likelihood of exclusion of the challenger for football and ballet, originally published in Mulvey and Killen (2015: fig. 4) (reprinted by permission of the publisher). ***$p < .001$

(Horn, 2007). Likewise, older adolescents evaluate exclusion of peers due to sexual orientation as more acceptable than other forms of discrimination such as teasing, harassing, or assaulting a gay or lesbian peer, and are more likely to refer to social norms and personal choice in regard to exclusion of a sexual minority peer (Horn, 2006). Thus, exclusion of an individual because of nonconformity to social norms and expectations pertaining to their group membership is often perceived as legitimate. This demonstrates how older children and adolescents expect exclusion to be a consequence of non-adherence to social norms, emphasizing their increasing awareness that the threat of exclusion can be a social tool for promoting conformity.

Paralleling these findings, recent studies examining norms on a group level (rather than a societal level) have demonstrated that, while children often personally approve of an individual who advocates for fair resource distribution in a context of inequality between groups, they also expect that others would not like that individual as much as they would. For instance, one study found that preschoolers personally approved of a peer who went against their classroom norm of seeking to keep more toys for themselves by advocating for equal allocation, but thought that other members of the classroom would be less approving of that individual (Cooley & Killen, 2015). These same differential attributions have also been found in older children's expectations about an after-school club's opinion of an individual who advocated for equal allocation of money between clubs when the usual approach was to seek more for the in-group (Killen, Rutland, Abrams, Mulvey, & Hitti, 2013; Mulvey, Hitti, Rutland, Abrams, & Killen, 2014). Further, recent studies indicate that group status plays an important role in children's expectations for how groups will respond to inequality. Under most circumstances, advantaged groups (with plentiful resources) are perceived to be less likely to take action to correct an inequality than are disadvantaged groups (Elenbaas & Killen, 2016).

In line with findings about the expected consequences of deviating from gender norms, these studies show that, from an early age, children expect that standing up to norms that exclude minority groups from opportunities and access to resources will not be easy, and will likely result in decreased support from the in-group. Together, this research reveals how, with age, children increasingly expect that groups will reject individuals who dissent from the prevailing social norms about status. Importantly, although children often personally support equality, they also recognize that voicing that opposition to the status quo may be untenable in light of dominant social hierarchies.

Social Identity and Prejudice

Interestingly, despite the strong influence of social norms and expectations on children's decisions to exclude, several studies have shown that children who are members of groups ranked lower on the status hierarchy (e.g., often girls and racial/ethnic minority children) are less likely to view social exclusion to be acceptable than their male and racial/ethnic majority peers. Highlighting the importance of group identity in developing conceptions of exclusion and prejudice, these findings point to one of the ways in which the material consequences of reduced access to resources and opportunities directly shapes children's support for equality and equal access.

With age, many adolescents in the USA, particularly those of African-American and Latino background, report increasing personal experiences with exclusion and discrimination perpetrated by teachers, peers, and strangers, with reports ranging from wrongful discipline in school to being hassled by store clerks to teasing and online harassment (Fisher et al., 2000; Rivas-Drake, Hughes, & Way, 2009; Umaña-Taylor, Tynes, Toomey, Williams, & Mitchell, 2015; Wong, Eccles, & Sameroff, 2003). Perhaps as a result of their personal experiences with prejudice and exclusion, several studies have revealed that older racial minority children and adolescents are less likely than their racial majority counterparts to view socially excluding a peer as acceptable, particularly in intimate situations like cross-race dating (Killen, Henning, Kelly, Crystal, & Ruck, 2007). Further, in later childhood, girls in many countries around the world have been found to be less accepting of exclusion of any kind than boys (Killen, Lee-Kim, McGlothlin, & Stangor, 2002; Killen & Stangor, 2001; Park & Killen, 2010). These findings suggest that membership in a traditionally excluded group (race, gender) can lead children to more negatively evaluate exclusion experienced by others.

Supporting this claim, research indicates that children from stigmatized groups are more aware of others' racial stereotypes than children from non-stigmatized groups (McKown & Weinstein, 2003). Likewise, when evaluating instances of interethnic exclusion, early adolescents from ethnic minority backgrounds (both in the USA and other countries) have been found to attribute more positive emotions (e.g., pride) to ethnic out-group members who exclude an ethnic minority individual

from a group than do early adolescents from ethnic majority backgrounds (Malti, Killen, & Gasser, 2012). These findings indicate that children whose social groups are the targets of habitual exclusion not only evaluate such behavior more negatively than their same-aged peers from majority group backgrounds, but they also assume that the excluding group feels proud of their biased actions.

Building on the research above concerning majority group children's stereotypic assumptions about the similarity of minority group members, these findings suggest that minority group children often perceive hostile attitudes toward inclusion from majority groups (i.e., they believe that majority groups feel good about excluding ethnic out-group members). These perceptions further underscore the cycle of intergroup misunderstanding and cynicism about inclusion that begins in childhood and adolescence.

Importantly, however, the extent to which children and adolescents identify with their social group, beyond simply belonging to that group, influences their evaluations of other in-group members who exclude out-group peers. For instance, in a study testing the factors that contribute to social exclusion based on religious identity in peer, home, and community contexts, Jewish American and non-Jewish American adolescents who reported higher levels of identification with their culture were less inclusive than those who identified less with their culture (Brenick & Killen, 2014). This means that membership in a traditionally marginalized group is no guarantee of inclusive attitudes. Rather, children's and adolescents' level of identification with their social group, as well as experiences as members of that group, impacts their willingness to include out-group peers. More broadly, research has shown that whether or not children demonstrate prejudice toward members of out-groups depends on the strength of their identification with their group, whether or not the out-group is perceived as threatening, and whether they believe that showing prejudice is consistent with the norms of the in-group (Nesdale, Maass, Durkin, & Griffiths, 2005; Rutland, Cameron, Milne, & McGeorge, 2005).

Developmental Outcomes of Intergroup Social Exclusion

In addition to the social, cognitive, and emotional consequences of intergroup social exclusion described above, exclusive behavior based on group membership in childhood and adolescence perpetuates social hierarchies that restrict access to resources for disadvantaged groups. For example, a large body of research has documented the consequences of socioeconomic disparities, particularly on health and academic achievement (Bradley & Corwyn, 2002; Brooks-Gunn & Duncan, 1997; McLoyd, 1998; Orfield & Lee, 2005; Saegert et al., 2007; Shonkoff & Phillips, 2000; Yoshikawa, Aber, & Beardslee, 2012). Yet understanding how social inequalities originate and are maintained requires a focus on the social as well as the material aspects of inequality (Killen, Elenbaas, Rizzo, & Rutland, 2016).

The problems associated with disadvantage are not equally distributed across the population. Rather, children and adults in groups based on race, ethnicity, gender, and sexual orientation are disproportionally affected. Thus, exclusion pertains not only to differential access to resources, but also to a set of cultural beliefs about the "types" of people that are more esteemed, respected, and deserving of resources than others (Appiah, 2005; Ridgeway, 2014; Sen, 2009; Tajfel & Turner, 1979). Through reciprocal processes of disadvantage and stigmatization, excluded groups are further restricted from access to resources as stereotypes and biases perpetuate discrimination (Lott, 2002).

For example, though economic inequality affects children of all racial/ethnic backgrounds, approximately two-thirds of African-American, Latino, and Native American children live in low-income families, in contrast to approximately one-third of their European-American and Asian-American peers (Addy, Engelhardt, & Skinner, 2013). As a result of economic inequalities, more than two thirds of African-American and Latino students attend lower-income schools, compared with less than one third of Asian-American and European-American students (Orfield & Lee, 2005). Likewise, the more time young children spend in same-sex peer groups, the more they tend to endorse gender stereotypic attitudes and behaviors (Maccoby, 2002; Martin & Fabes, 2001). Gender stereotypic assumptions about girls' abilities have detrimental impacts on their self-esteem, as well as academic motivation (Brown & Bigler, 2005; Halpern et al., 2011). And although both men and women are affected by gender stereotypes, in adulthood, women's median income is lower than men's on average, even when they have the same occupation and level of education (Saegert et al., 2007).

Children's social experiences in peer groups, making decisions about inclusion and exclusion and resource distribution and access, are connected to the social inequalities of their surrounding environment. Research on exclusion in development that includes consideration of social status helps to explain part of the reproduction of power and privilege that perpetuates inequality, through a dual focus on the material consequences of social resource disparities as well as the norms and beliefs about power and status that reinforce existing social hierarchies.

While the research discussed thus far provides ample evidence of how children's and adolescents' biases, adherence to group norms, and discriminatory actions establish and maintain social hierarches throughout development, there is also evidence that reasoning about inclusion and equality emerges early in development and reflects concern for the fair treatment of peers (Killen & Smetana, 2015). In the next section, we outline how research in developmental science reveals that, as children develop social cognitive categories related to group identity and morality, and become aware of status hierarchies, in many cases they begin to argue for rectifying inequalities, drawing on their concerns for others' welfare, rights to resources, and equal treatment (Elenbaas & Killen, in press; Killen et al., 2016).

Fairness and Inclusion in Childhood and Adolescence

As members of social groups, children often seek a balance between preserving group norms, equal and just treatment of others, adherence to societal norms, and expectations from both peers and parents. Children are not always subject to intergroup biases, rather, they reason about the legitimacy of social norms and exclusive attitudes (Killen, Rutland, et al., 2013). Just as children sometimes use stereotypes to condone exclusion, there are times when they reject discrimination in favor of inclusion and equality, drawing a balance between group affiliations and support of others' rights to resources (Helwig, Ruck, & Peterson-Badali, 2014; Killen & Smetana, 2015). Through investigation of these dynamic processes, the immediate and long-term negative consequences of social exclusion on developmental outcomes can be reduced (Abrams & Killen, 2014).

Perceptions of Discrimination

Children's ability to detect exclusion, prejudice, and discrimination in others' actions increases with age. For instance, between early and middle childhood, children become increasingly aware of existing economic inequalities between racial groups (Bigler, Averhart, & Liben, 2003), and by middle childhood, children in the USA and in other countries spontaneously offer the example of unequal distribution of goods between groups when asked what kinds of behaviors constitute discrimination (Brown & Bigler, 2005; Verkuyten, Kinket, & van der Wielen, 1997). Further, in older childhood and adolescence, children increasingly perceive racial bias and discrimination in the US political system (Bigler, Arthur, Hughes, & Patterson, 2008), and recognize that racial minority groups are more likely to be the targets of institutional discrimination than racial majority groups (Brown, Mistry, & Bigler, 2007). Thus, older adolescents more readily identify the institutionalized biases of their social environment, recognizing that people may act on their stereotypes and biases, and that historically marginalized groups are often the targets of exclusion.

Similarly, with age, children draw progressively stronger connections between their own daily experiences and overarching social biases. For instance, when evaluating the exclusion of an African-American child from a group of European-American peers, African-American children and adolescents have been found to reason about the wrongfulness of this action in the larger context of society by elaborating on the negative consequences of discrimination (Killen et al., 2002). These findings illustrate how, between middle childhood and adolescence, children begin to connect their own everyday experiences of exclusion with larger, systemic inequalities in their social environment. Notably, children are especially likely to perceive gender or racial discrimination in familiar contexts if the potential perpetrators have a history of biased behavior in line with their current actions. That is, children are more likely to recognize someone's behavior as discriminatory when

they have converging evidence of that individuals' past behavior or present prejudicial attitudes (Brown, 2006; Brown & Bigler, 2004).

In a recent series of studies on resource allocation and social inequalities, Elenbaas, Killen, and colleagues examined how children allocate necessary resources to groups when the same resources have been allocated unequally between racial groups in the past (Elenbaas & Killen, in press; Elenbaas, Rizzo, Cooley, & Killen, 2015; Killen et al., 2016). The aim of this work was to examine children's responses to social inequality, testing how their affiliations with racial in-groups and out-groups interact with their support for equality and fair distribution to influence resource allocation decisions. In one study, children's responses to an inequality of educational resources changed with age, as children considered the implications of restricting access to this important resource (Elenbaas et al., 2015). In this study, 5–6 year-olds negatively evaluated an inequality of school supplies that put their racial in-group at a disadvantage, but evaluated the same disparity neutrally when it put their racial out-group at a disadvantage. By contrast, 10–11 year-olds did not differentiate whether it was their in-group or their out-group receiving fewer resources. Older children in this study evaluated social inequality negatively, took action to correct it when they had the opportunity to allocate resources, and reasoned about the importance of equal access and correcting past inequalities, regardless of whether it was their in-group or their out-group that had received fewer resources.

Along these same lines, research has also shown that, with age, older children and adolescents determining whether to include a boy or girl in a gender stereotypic activity include children who do not match the gender stereotype when both potential playmates are equally skilled at the game and equally interested in joining (Killen & Stangor, 2001). This demonstrates a concern for fairness and inclusion in older children that relates to providing opportunities for under-represented groups. Together these and other findings indicate that, with age, children not only recognize restriction of access to resources for certain social groups as discrimination, but also take action to ensure equal access when they have the chance to allocate resources and opportunities. Thus, when children and adolescents have direct evidence of discrimination, they often seek to rectify past disparities, even if it means that their own group receives less of a valued resource. These findings reveal the strength of children's developing concern for others' wellbeing, and highlight the developmental process whereby children formulate an understanding about social inequalities.

Support of Rights

In addition to detecting discrimination, research indicates that, with age, children and adolescents are increasingly able to reason about their own and others' rights to resources. Recent studies indicate that, from as early as 6 years of age, children recognize that restricting groups' access to resources that are needed to avoid harm (e.g., medicine) has negative implications for individuals' welfare (Rizzo, Elenbaas,

Cooley, & Killen, in press). It is not until early adolescence, however, that children begin to reason about their own and other's equal rights to access societal resources (Helwig et al., 2014; Peterson-Badali & Ruck, 2008; Ruck, Tenenbaum, & Willenberg, 2011).

For example, research on children's conceptions of nurturance rights indicates that, by about 10 years of age, children support their own and others' rights to quality education and medical care (Peterson-Badali, Morine, Ruck, & Slonim, 2004). One study found that even young children negatively judged a law prohibiting certain groups of children from receiving the same type of education as their peers, or prohibiting doctors from treating poor people (Helwig & Jasiobedzka, 2001). Endorsing others' rights to access resources like these (i.e., education and medical care) is not the same, however, as actively reasoning about these issues as entitlements, rather than privileges that could be taken away. Reasoning along these lines emerges and develops in adolescence (Ruck, Keating, Abramovitch, & Koegl, 1998). Interestingly, one study found that adolescents were more likely than younger and older children to reject a hypothetical governmental decision to exclude children of one race from attending school, on the basis of their reasoning that all children deserve education (Killen et al., 2002).

Notably, research indicates that, in many cases, issues of individual rights are not subordinated to community norms or obedience to authority, even in cultures traditionally characterized by high adherence to group norms or hierarchy (Helwig et al., 2014). Rather, individual rights and fairness are important to adults and children in diverse cultural settings, and reasoning based on rights and autonomy increases with age in children around the world (Elenbaas & Killen, in press). Together, these findings indicate that, in later childhood and adolescence, children's negative evaluations of resource inequality begin to incorporate notions of larger-level disparities apparent in their everyday lives, expanding to an emerging recognition of rights violations for certain groups. This suggests that, although their personal experience with acquiring access to resources like education and medical care is second hand, they often deem that these social resources should be fairly distributed.

Supporting this claim, recent research indicates that children's awareness of overarching societal disparities between groups predicts their responses to group-based resource inequalities (Elenbaas & Killen, in press). For example, one recent study found that, with age, both European-American and African-American children gained increasing awareness of economic disparities between African-Americans and European-Americans. When these same children witnessed an inequality of medical supplies between hospitals serving these two racial groups, they evaluated the disparity more negatively with age. Many older children also reasoned about groups' rights to adequate medical care, demonstrating early recognition of this issue as rights-related. Increasing awareness of overarching economic inequalities combined with increasingly negative moral judgments of the resource disparity explained age-related increases in children's endorsement of actions taken to attenuate the inequality by giving more to a hospital serving African-Americans that had received less in the past. That is, increasing sophistication in children's moral judgments and increasing social knowledge about groups were both

important contributors to older children's desire to rectify resource inequalities. Together this research reveals that, beyond in-group affiliations, children's awareness of historical patterns of unequal access to important resources impacts their conceptions of group's rights in the present and their support of actions taken to correct past inequalities and current disparities.

Intergroup Contact and Inclusion

In addition to age-related increases in recognition of discrimination and support for groups' rights to resource access, considerable research in developmental science has focused on the social and contextual variables that support children of all ages in developing inclusive and tolerant attitudes and behaviors. In addition to reducing prejudice overall (Tropp & Prenovost, 2008), greater opportunities for contact with members of a relevant social out-group can lead to more proactive attitudes about inclusion and fairness for both majority and minority status children and adolescents.

Broadly, school diversity is a strong predictor of positive learning outcomes, heightened civic engagement, and preparation of students for a diverse workforce (Orfield & Lee, 2005). Research also indicates that racial/ethnic minority students feel safer, less harassed, and less lonely, and report higher self-worth the more racially/ethnically diverse their classrooms are (Juvonen, Nishina, & Graham, 2006). Thus, positive and cooperative interaction with members of other social groups improves not only immediate interpersonal relations, but prepares children for diverse workplaces and adult social spaces.

More specifically, both racial minority and majority children report more inclusive attitudes in diverse schools. For example, whereas younger European-American children in racially homogeneous schools demonstrate implicit negative assumptions about racial minority peers in ambiguous social interactions, children at the same age, in the same school district, enrolled in racially diverse schools demonstrate no such implicit racial biases (McGlothlin et al., 2005; McGlothlin & Killen, 2006). Further, evidence from several countries around the world indicates that racial/ethnic majority children who report greater numbers of friends from racial/ethnic minority backgrounds (i.e., cross-group friendships) experience more positive intergroup relations over time (Aboud, Mendelson, & Purdy, 2003; Feddes, Noack, & Rutland, 2009). Likewise, racial minority adolescents who report greater contact with out-group peers are more likely than their peers reporting little intergroup contact to rate intergroup exclusion as more wrong and to assert that they would intervene if they witnessed exclusion (Ruck, Park, Killen, & Crystal, 2011).

In regard to reasoning about groups' access to resources, some studies support age-related increases in reasoning about fairness and equality among children attending diverse schools (Elenbaas et al., 2015; Killen et al., 2016), suggesting that school racial diversity may be an important factor in the decision to rectify resource inequalities between groups. Although direct comparisons with samples from racially

homogeneous schools are not yet available, it is possible that conceptions of fairness in the context of resource inequality, like reasoning about peer-based inclusion and exclusion, are impacted by environmental diversity and children's opportunities to interact with others from different backgrounds.

In addition to providing opportunities for friendship with peers of other social groups, research also supports the conclusion that more immediate level school and peer norms play an important role in children's judgments about exclusion. For example, adolescents attending schools with safe school practices regarding sexual orientation (e.g., policies, professional development) have been found to evaluate exclusion on the basis of sexual orientation as more wrong and to use more moral reasoning in justifying their judgments than adolescents attending schools without such practices (Horn & Szalach, 2009). Research also indicates that preschoolers who use gender stereotypes to determine who should be able to join a peer group activity are willing to change their decision to focus on fairness and inclusion of underrepresented groups when the fairness of turn-taking is suggested by an adult (Killen et al., 2001). Thus, adults can have a positive impact on children's inclusive attitudes by establishing norms about inclusion on an institutional level.

More locally, children are more likely to demonstrate prejudice toward out-group members if they believe that such actions are condoned by their peer in-group (Nesdale et al., 2005; Rutland et al., 2005). Yet conversely, adolescents placed in social groups with stated goals of inclusivity (seeking to include others who are "different" from them) been shown to be more inclusive of ethnic out-group peers than adolescents placed in similar groups with exclusive norms (i.e., preferences for those who are "similar to them"; Hitti & Killen, 2015).

These findings show how norms and expectations are at work in children's decisions to include and exclude, from larger community norms of diversity, to local school norms of acceptance, to unique peer group practices. Adults and children alike can promote inclusion by facilitating intergroup contact and understanding. Beyond simply bringing groups together, opportunities for close friendships across group boundaries, adult-instigated policies of tolerance, and peer group-generated norms of inclusiveness have all been shown to have positive and wide-ranging effects for reducing stereotypes and promoting equality in development.

Conclusion

Children's biases, adherence to group norms, and discriminatory actions contribute to the cycle of social exclusion that begins early in development. Yet children also display a concern for others' welfare and equal treatment in situations that reflect diversity of group membership based on race, ethnicity, gender, culture, and sexual orientation. In fact, research indicates that these different orientations coexist within individuals throughout development. Thus, beyond consideration of the negative outcomes of exclusion, research on this multifaceted issue includes consideration of the norms and beliefs about status that reinforce existing social hierarchies. Social

experiences in childhood can set the stage for adult cognition and behavior. Thus, the importance of a developmental perspective on social exclusion lies in its capacity to identify the psychological underpinnings of inequality and diminish the negative consequences of social exclusion for children and adults.

While intergroup social exclusion has sources that are distinct from the causes of interpersonal peer exclusion, some of the long-term negative consequences are the same. Moreover, there are situations in which intergroup exclusion can create problems with interpersonal relationships. For example, children who are persistently excluded because of their religion may develop negative personality dispositions, which may result in an inability to successfully form peer friendships. Conversely, children who are at risk for externalizing behavior, such as aggression, may create an exaggerated perception of out-group threat if they hold prejudicial or hostile attitudes towards others. Future research should more closely examine the potential intersections of these two forms of exclusion (i.e., intergroup vs. interpersonal).

While the consequences of exclusion and inequality are evident in the physical, cognitive, and social risks associated with group-based disparities, the origins of thinking about status and stigma are often less apparent. In this way, developmental science makes a vital contribution to understanding why and how social exclusion and social inequality persist and grow. Understanding exclusion in development, taking into consideration children's understanding of social status, provides a window into early understanding of group dynamics, intergroup biases, and exclusive attitudes and behaviors.

As reviewed in this chapter, in some social contexts, and at particular periods in development, group identity becomes quite salient, leading children to use stereotypic expectations to guide their inclusive or exclusive attitudes towards peers. Everyday choices about restricting access to peer groups, opportunities, and resources reflect the social hierarchies of children's worlds. These are no less damaging than the biases and discriminatory behaviors that permeate adult social relations. In fact, social exclusion of peers on the basis of group memberships like gender or race is already pervasive in childhood and adolescence, and reflects children's developing biases, stereotypes, and beliefs about status.

Yet, as members of social groups, children often seek a balance between preserving group norms, equal and just treatment of others, adherence to societal norms, and expectations from both peers and parents. In fact, with age, children weigh stereotypes and motives to ensure fairness, consider in-group versus out-group status and identity, balance adherence to social norms with promotion of inclusion and equality, and consider rights as well as the consequences of deviating from exclusive or unequal norms. As children reflect on their experiences, considerations of fairness and equality predominate. With age, children demonstrate concern for rectifying social inequalities and challenging group norms that are exclusive or unfair.

As biases are often deeply entrenched by adulthood, understanding children's perspectives on exclusion and inequality provides direction areas for intervention efforts in childhood. As the research in this chapter reveals, children demonstrate willingness to include out-group members in their social groups, detect discrimination, reason about others' rights to resources, and rectify an unequal status quo.

As they enter adolescence, children are afforded greater opportunity to exercise their willingness to enact social change. Fortunately, research also points to ways in which adults can structure children's social environments to promote positive intergroup attitudes and inclusive behavior during this time, through co-construction of intergroup contact, inclusive social norms, and reasoning about equality and justice. These factors, and others, can positively impact children's and adolescents' views about exclusion and resource access, highlighting the significant role of social experience in the development of children's orientations toward fairness.

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Research in Educational Psychology: Social Exclusion in School

Gary W. Ladd and Becky Kochenderfer-Ladd

For children and adolescents, the school setting differs from other socialization contexts (e.g., families, neighborhoods) because the majority of their associates are peers (i.e., classmates of the same age). Although the study of peer relations in school contexts has a long history (Ladd, 2005), recent theoretical and applied pragmatic developments have elevated this topic's importance within the scientific community and society at large. For example, within frameworks developed to explain how children adjust and succeed in school, it has essentially been proposed that peers may have greater influence than either teachers or parents on children's school adjustment because youth spend the vast majority of their days immersed in this context with age-mates (Hymel, Comfort, Schonert-Reichel, & McDougall, 1996; Ryan & Ladd, 2012). In addition, practical issues such as educational innovations and safety concerns have made the school's peer context a focal point for both educators and parents. Moreover, instructional practices have changed over the last several decades such that teachers increasingly utilize classroom peers as a means of promoting student learning and achievement (e.g., peer-mediated learning strategies such as peer collaboration, tutoring, and cooperative learning; Ladd, Kochenderfer-Ladd, et al., 2014). Further, the alarming incidence of student-perpetrated violence in schools (e.g., bullying, shootings) has emerged as a public health concern in many nations and has brought greater attention to the peer context of schooling.

As a result, greater investigative attention has been devoted to the hypothesis that peer relations in the school context may influence multiple aspects of children's and adolescents' adjustment. Among the most promising lines of investigation are those predicated on the proposition that children's relationships with classmates immerse them in processes (e.g., participation vs. exclusion, support

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vs. conflict, receiving assistance vs. being ignored) that affect their ability to adapt to school challenges which, in turn, influences their development and achievement (e.g., level of school engagement, amount of learning, academic competence; Ladd, 2003, 2005). Because peer relationships bring different processes to bear upon children and confer different provisions, it is likely that they vary in adaptive significance for school-related demands (Ladd, Kochenderfer, & Coleman, 1997). Moreover, as posited in this volume, being excluded from such influential relationships likely places youth at a disadvantage socially (e.g., lonely, stunted social skills), cognitively (academically), and psychologically (e.g., anxious, depressed). Thus, the purpose of this chapter is to consider what is known about peer social exclusion in school settings. Toward this end, we review theory, research, and evidence that address both the origins of peer social exclusion and its (mal)adaptive significance for children's adjustment. In the sections that follow, consideration is given to: (1) the historical and current conceptualization and measurement of peer social exclusion and (2) modern theory and research on the correlates of peer social exclusion in school contexts.

Social Exclusion in School Contexts: Conceptualization and Measurement

The scientific study of children's social difficulties, such as peer social exclusion, can be traced back to the early decades of the twentieth century. Specifically, during the 1930s and 1940s, researchers were interested in profiling the "structure" of children's peer groups and delineating the types of roles or relations that individual children developed with members of their group. One of the trends that emerged during this early research was driven by questions about how individuals "fit" into their peer groups and, in particular, whether some children failed to fit in or had poor relations with peers. Among researchers who sought to answer these questions, an enduring objective was to characterize (i.e., define and describe) the conditions under which it could be said that a child had poor peer group relations. For investigators, this task became one of stipulating relevant constructs and describing the intra-group dynamics that were indicative of an individual's lack of fit with members of his or her peer group (Ladd, 2005).

Among those who initially studied children's peer group relations, the concept of social integration—or more precisely, its absence (i.e., failing to fit into one's peer group)—became an impetus for empirical investigations, most of which were conducted in school settings. Researchers tended to define and measure this construct in one of two ways. As it was first construed, social exclusion referred to individuals who were among the least liked of any of their classmates. In other words, exclusion (e.g., poor integration or fit among peers) was signified by evidence suggesting that a child was not liked by most members of his or her peer group or, specifically, that most members of the child's social group did not pos-

sess positive sentiments toward them as a playmate or workmate (Northway, 1944). Sociometry was well suited as a measurement strategy for this conceptualization because it allowed researchers to assess "who liked who" and determine which children were *least liked* by their peer group.

In comparison, peers' behaviors, rather than sentiments, figured more prominently in the second conceptualization of social exclusion. Specifically, investigators such as Lippitt (1941) and Moreno (1942) recognized that marginalization, or failure to become integrated into one's peer group, was manifest in peers' actions within participatory contexts (e.g., ignoring, not choosing a child as a playmate) and, in particular, in their responses to children's social overtures (e.g., frequent or consistent rejection of a child's entry bids). Here, the preferred measurement strategy was one that documented peers' behaviors in social choice or preference situations (e.g., playmate or workmate selection), or in response to other children's social overtures (e.g., a child's attempts to enter ongoing peer activities). As illustrated next, these two conceptualizations, and associated measurement goals, persisted throughout the later decades of the twentieth century, and continue to be influential in contemporary research on children's social exclusion in school.

Conceptualization of Social Exclusion

Peer Group Rejection

Within the conception of social exclusion as being *least liked* by one's peers, peer group rejection occurs when a majority of a child's group-mates harbor feelings of dislike toward him or her. Peer rejection, therefore, is defined by intra-group sentiments, specifically, by the feelings of dislike that peers have toward specific individuals within their peer group. Consistent with its origins, current conceptualizations of peer rejection are defined in terms of group members' feelings toward specific children, but differ from earlier definitions because it incorporates both positive (i.e., liking) and negative (i.e., disliking) sentiments (Ladd, 2005). Thus, instead of relying solely on an absence of positive peer sentiments (i.e., low liking), this concept has been elaborated to include the presence of negative peer sentiments (i.e., disliking). It was the inclusion of *disliking* in this conceptualization—particularly when construed as a consensual sentiment—that made it possible to differentiate between the concepts of peer group acceptance (being liked by most and disliked by few) and peer group rejection (being disliked by most and liked by few). In fact, this allowed investigators to define additional peer group dynamics (often called "social statuses") such as "neglected" (neither liked nor disliked; overlooked) and "controversial" (liked by some and disliked by others). Although researchers who worked within this tradition defined peer group rejection in terms of peers' sentiments, many regarded the construct as a representation or proxy for social marginalization or exclusion (Ladd, Price, & Hart, 1990).

Recipients of Peers' Exclusionary Behaviors

The second conceptualization of social exclusion in school-related peer groups can be seen as the modern embodiment of perspectives that initially were articulated by Lippitt (1941) and Moreno (1942). In contrast to the construct of peer group rejection, however, this concept has been less prominent in contemporary research on social exclusion in school peer groups.

Theoretically, researchers' investigative tactics and assessment strategies imply that peers' exclusionary behaviors can be parsed into two forms: passive (i.e., ostracism; Williams, 2001, 2009) and active exclusion. Passive exclusion or ostracism—whether motivated by benign neglect or willful abandonment—is postulated to occur when peers persistently ignore or avoid specific children. Individuals become passively excluded when peers consistently: (1) fail to initiate interactions with them, (2) fail to respond to (e.g., ignore) their overtures, or (3) fail to include them in social activities. Although social exclusion bears some resemblance to the construct of peer neglect (i.e., being overlooked as indicated by an absence of peer liking), it is defined in terms of peers' collective behaviors rather than sentiments.

Active exclusion, by contrast, more closely resembles the construct of peer group rejection, but is defined in terms of peers' rejecting behaviors rather than their negative sentiments (i.e., disliking). This form of behavioral exclusion refers to actions performed by peers that are intended to reject children's social overtures, or prevent children's access or participation in social activities. It is posited that individuals are actively excluded when peers: (1) dismiss, rebuff, or punish children's social overtures, or (2) oppose, obstruct, or otherwise impede children's access or involvement in social activities.

Measurement of Social Exclusion

Existing research shows that the approaches used to measure social exclusion in school settings differ. The strategies, informants, and schemes utilized vary, in part, with the way exclusion is defined. When characterized as peer group rejection, greater convergence exists in investigators' methods, but more diversity is apparent in their schemes. The reverse characterizes research in which exclusion is defined in terms of peers' exclusionary behaviors.

Peer Group Rejection

When social exclusion is defined as peer group rejection, researchers must first identify the targeted peer group and then assess each member's sentiments (i.e., feelings of liking and disliking) toward every other member of that peer group. To achieve this purpose, contemporary researchers primarily have relied on sociometric methodology and utilized peers as informants.

For young children in childcare or nursery school settings, researchers have utilized nomination or rating-scale sociometric tools to assess peer group rejection. The typical procedure for nomination sociometrics is that investigators meet children individually, show them a collage of classmates' pictures, and then ask them to point to (nominate) classmates that they most and least like to play or work with in school. Rating-scale sociometrics are administered in the same way, except that investigators ask children "How much do you like to play with this person?" and then ask them to place each classmate's photo in one of three "sort boxes" that are scaled to represent gradations from liking to disliking (i.e., "a lot," "kind of," and "not much"; Asher, Singleton, Tinsley, & Hymel, 1979). Peer group acceptance and rejection scores are calculated for each child in the peer group by averaging the number of nominations or the collection of ratings that he or she received from classmates. These averaged scores are then standardized to adjust for the number of nominators so that it is possible to make statistical comparisons across classrooms or peer groups of different sizes. Within a given classroom or peer group, children receiving the highest scores for disliking (negative nominations) or lowest ratings for liking (average ratings) are considered rejected by their peers.

Although investigators have utilized both nomination and rating-scale sociometrics to identify rejected children (Asher & Dodge, 1986), nomination methods have been preferred. Whereas rating scale sociometrics are better suited for estimating a child's average level of acceptance across all group members, nomination measures provide a more direct assessment of peer disliking (e.g., via negative nominations). Moreover, nomination procedures allow researchers to classify children into more complex social statuses. For instance, in a widely used nomination ("standard score") scheme devised by Coie and colleagues (Coie & Dodge, 1983; Coie, Dodge, & Coppotelli, 1982), standardized positive and negative nominations can be combined to create social impact (positive plus negative nominations) and social preference scores (positive minus negative nominations). Further, resultant social impact and social preference scores can be used to classify children into one of five peer status categories, labeled *popular* (i.e., high impact plus high social preference), *rejected* (i.e., high impact plus low social preference), *neglected* (i.e., low impact; suggesting that these children are ignored or overlooked when peers nominated their most- and least-preferred playmates), *controversial* (i.e., high social impact and above average like most *and* like least scores), and *average* (i.e., moderate social preference and near-average social impact scores). Because of the flexibility and richness of data obtained, many investigators consider nomination sociometrics as the tool of choice for identifying children who are rejected by peers.

Recipients of Peers' Exclusionary Behaviors

When social exclusion is construed in behavioral terms (i.e., behavioral exclusion), researchers are faced with the task of assessing peers' actions toward specific children. Compared to the "standard practices" that have evolved in research on peer group rejection (i.e., sociometric strategies), less consensus exists about how to

measure this form of social exclusion. Of the strategies that do exist, most have been designed to capture active exclusion rather than passive forms of social exclusion (e.g., ostracism). That is, the assumption upon which most assessments have been built is that exclusion and the way in which children experience exclusion is through the actions (e.g., rejecting behaviors) that peers' direct toward them or make contingent on their overtures during social interactions.

Observational strategies are perhaps the most obvious and direct approach to documenting behavioral exclusion, and have their origins in Moreno's (1942) work. Modern examples of this strategy are exemplified by the naturalistic and experimental approaches researchers developed to document peer behavior in response to children's "entry bids" or attempts to join ongoing peer group activities. Corsaro (1981), for example, became a participant observer in preschool classrooms and used field notes to describe how children succeeded or failed at joining peer's play activities. His analysis identified several types of exclusion strategies that peers used to reject children's overtures, including assertions about ownership (e.g., "These toys belong to us and you can't have them"), references to overcrowding (e.g., "There are too many people here already"), prohibitions without justifications (e.g., "I said no"), denial of friendship (e.g., "You're not my friend right now, so you can't play"), and use of arbitrary rules (e.g., "You can't play with bare feet"). Other illustrations of observational strategies are found in investigators' efforts to observe the success-rate of young children's goal-directed peer interactions (i.e., successes vs. failures of initiations; Nelson, Rubin, & Fox, 2005), or researchers' use of video recording to document and describe the range of rejecting behaviors that children receive at the hands of peers (Asher, Rose, & Gabriel, 2001).

A second assessment strategy is to ask knowledgeable informants to report the extent to which specific children have been the targets of peers' exclusionary behaviors. Thus far, researchers have utilized classroom teachers (Gazelle & Ladd, 2003) and peers (Gazelle & Druhen, 2009) as informants. With teachers, instruments typically take the form of multi-item rating scales. For example, the Excluded by Peers subscale of the Child Behavior Scale (Ladd, Herald-Brown, & Andrews, 2009; Ladd & Profilet, 1996) contains items that refer to both passive (e.g., "Is ignored by peers") and active (e.g., "Peers refuse to let this child play with them") social exclusion. When peers are used as informants (Gazelle & Druhen, 2009), classmates have been asked to nominate children who are ostracized or passively excluded (e.g., "They don't get invited to parties or chosen to be on teams or to be work partners") or actively excluded ("Ask if they can play and other kids say 'no' and won't let them play").

A third approach to assessment is evidenced in investigators' attempts to map the features of children's peer networks. Both observational and sociometric methodologies have been used for this purpose (Gest, Farmer, Cairns, & Xie, 2003; Ladd, 1983). Using a combination of observational and sociometric methods, researchers have tended to document not only peers' acts of exclusion (i.e., rejecting behaviors) but also the ostensible processes and effects of exclusion.

In the context of preschool classrooms, Ladd and colleagues (Ladd, 1983; Ladd et al., 1990) identified children who were disliked by peers and observed their

interactions. In every instance, they recorded both the nature of the child's interactions and the identity of the participants. From these data, the investigators constructed a profile of every child's peer partners (i.e., the size and age/sex composition of their peer networks), the frequency of their interactions by partner (i.e., frequent vs. infrequent playmates), and the tenor of the interactions that children had with network members (i.e., cooperative vs. aggressive exchanges). Findings from these studies suggested that, over time, dislike by ones' peers increasingly became associated with social exclusion. On grade school playgrounds, for example, it was found that rejected children were less likely to interact with age-mates and more likely to associate with younger companions (Ladd, 1983). In preschool classrooms, evidence revealed that rejected children's peer networks tended to shrink in size over time—these children tended to have fewer and fewer playmates as the school year progressed (Ladd et al., 1990).

A fourth approach has emerged in social network theory and research (Gest, Graham-Bermann, & Hartup, 2001) and is based on the concept of centrality. Specifically, centrality refers to children who have ties with many members of their peer group; therefore, its converse—isolation or peripheral status—refers to individuals who have few such connections. Although isolation or peripheral status may be an indicator of social exclusion in a manner similar to sociometrically measured peer group rejection or neglect (although, theoretically, centrality is a distinct construct; Gest et al., 2001), it is not by itself a measure of peers' behavioral responses nor does it differentiate between passive and active forms of exclusion. Nevertheless, social centrality is emerging as a measure of the extent to which children and youth fit within their peer group.

Peer Group Rejection and Behavioral Exclusion: Distinct Aspects of Social Exclusion?

It has been rare for those who study children's social exclusion to examine peer group rejection and behavioral exclusion in the same study. As a result, it is not clear whether measures of peers' rejecting sentiments (i.e., peer group rejection) and peers' rejecting behaviors (i.e., behavioral exclusion) tap the same or different aspects of this construct. Studies that have been conducted with both constructs suggest that, during childhood and early adolescence, they correlate moderately (Ladd et al., 2009; Ladd & Profilet, 1996). Specifically, correlations show moderate convergence between peer group rejection and peer behavioral exclusion ranging from 0.42 to 0.63 from kindergarten through grade 9. Such findings lend support to the premise that some of the information captured by these two indicators comes from the same or closely related phenomena. Nevertheless, it is not known if these indicators tell us something different about social exclusion and its role(s) in children's health and development.

To help address this question, unpublished data from one of our longitudinal projects were examined. In particular, data gathered on a sample of 391 children (195 males) from kindergarten to grade 9 (K–9) and a supplementary sample of 100 children (50 males) followed from grades 5 to 9 were analyzed to determine the

extent to which these measures provide different or overlapping information about social exclusion, particularly as it relates to children's adjustment. To reduce problems associated with shared method variance, measures from different informants (peers, teachers, and parents) were used in these analyses. Specifically, during the spring term of each year, (a) peer nomination procedures were used to obtain a measure of peer group rejection (i.e., each student's average number of negative (disliking) nominations standardized within classrooms), (b) teacher ratings on the Social Exclusion by Peers subscale of the Child Behavior Scale (SE-CBS; Ladd et al., 2009) were used to calculate an index of peer behavioral exclusion, and (c) parent reports on Achenbach's Child Behavior Check List (CBCL subscales; Achenbach, 1991) were used as a measure of children's aggressive and withdrawn symptomatology. CBCL data was obtained from parents beginning in grade 2 and, so, yearly relations were examined for grades 2 through 9.

Correlations showed significant year-to-year stability for peer group rejection (rs ranged from 0.50 to 0.70) with the stronger stability evidenced during the latter years. By contrast, behavioral exclusion scores were not as stable in the early grades (K–3; rs ranged from 0.31 to 0.53) but exhibited greater consistency during grades 4 through 9 (rs ranged from 0.45 to 0.60). It may be the case that, with young elementary-age children, peers' excluding behaviors are not as consistently directed against specific children, are more difficult to identify, or are not as closely monitored by teachers. Further, correlations between the social exclusion and maladjustment measures revealed that, on average: (1) scores for peer group rejection (rs ranged from 0.24 to 0.31) and behavioral exclusion (rs ranged from 0.20 to 0.32) correlated similarly with aggressive symptomatology at each time of measurement, and (2) scores for behavioral exclusion were somewhat more associated with withdrawn symptomatology (rs ranged from 0.20 to 0.32) than scores for peer group rejection (rs ranged from 0.10 to 0.24) at each time point.

To examine unique or overlapping contributions of the social exclusion measures to children's adjustment, regression analyses were conducted. Regression analyses with aggressive symptoms indicated that the results varied by grade level (see Table 1). Specifically, in grades 2 and 3, peer group rejection had a significant partial regression weight ($p < .01$) whereas behavioral exclusion did not. For all remaining grades, both partial regression weights were significant suggesting that, at older ages, each exclusion index provided unique information about children's aggressive symptoms that was not shared with the other.

For withdrawn symptoms (see Table 2), tests on partial regression weights showed that, after adjusting each exclusion measure's association with the criterion for its counterpart, only the behavioral exclusion measure's association was significant. This result was consistent across all times of measurement suggesting that, of the two exclusion indices, only the behavioral one contained information that was uniquely associated with children's withdrawn symptoms.

Although preliminary in nature, these findings suggest that peer group rejection and behavioral exclusion—at least as indexed by the measures evaluated here—have the potential to provide unique information about the phenomenon of social exclusion as it pertains to certain forms of child maladjustment. This conclusion is,

Table 1 Standardized (β) regression weights and *p*-values for behavioral exclusion and (peer group rejection) when regressed simultaneously on aggressive symptomatology

Grade	CBCL Aggressive Symptoms							
	2	3	4	5	6	7	8	9
2	.11 (.24***)							
3		.09 (.26***)						
4			.24*** (.19**)					
5				.21*** (.11*)				
6					.19** (.21***)			
7						.17** (.24***)		
8							.26*** (.14*)	
9								.22*** (.19**)

Note. β's for peer group rejection shown in parentheses. *$p < .05$; **$p < .01$; ***$p < .001$

Table 2 Standardized (β) regression weights and *p*-values for behavioral exclusion and (peer group rejection) when regressed simultaneously on withdrawn symptomatology

Grade	CBCL Withdrawn Symptoms							
	2	3	4	5	6	7	8	9
2	.22*** (.08)							
3		.19*** (.01)						
4			.23*** (.01)					
5				.17** (.03)				
6					.26*** (.08)			
7						.17** (.14*)		
8							0.20*** (.05)	
9								.19** (.09)

Note. β's for peer group rejection are shown in parentheses. *$p < .05$; **$p < .01$; ***$p < .001$

of course, tentative given that additional research is needed to examine measurement issues (e.g., informant choices, item content, scaling, administration procedures), test additional validity criteria, and so on.

Theory and Research on the Origins and Correlates of Social Exclusion in School

Thus far, investigators' research on the origins and effects of peer exclusion in school settings has been guided more by working hypotheses and collaborative model building than by the deductive logic characteristic of formal theory. As this area of investigation matured, researchers moved away from empirical speculation—the predominant force behind research conducted during the 1930s and 1940s—and began to devise and test increasingly complex, multivariable models. Of particular relevance to this chapter are models that have been developed to elucidate: (1) the origins of school-based social exclusion, and (2) the potential effects of social exclusion on various aspects of children's adjustment, including their school engagement and achievement, psychological adjustment, and perceptions of schoolmates.

What Causes Children to Be Socially Excluded by Their Classmates?

The first attempts to explain peer exclusion—the observation that peers exclude some children but not others in group contexts such as classrooms—can be seen in articles published in the 1930s and 1940s. Koch (1933), for example, appeared to work from a relational exchange or maintenance perspective, arguing that children became unpopular when they failed to maintain allegiances with other members of their group. Bonney (1943) utilized a social attractiveness rationale, suggesting that peer acceptance or exclusion in groups stemmed from each member's perceptions of every other member along a continuum that ranged from "mutual attraction" to "mutual rejection." Moreno (1942, p. 395) argued for the need to identify principles that "bind and separate children" and speculated that individuals who occupied less favorable social positions in peer groups (e.g., being disliked or rejected) owed their status to specific behavior patterns, such as hostility or submissiveness.

   In recent years, the models that researchers have developed to explain the origins of peer social exclusion and ostracism have been based on premises about: (1) children's social-personal characteristics—particularly their behavior among peers in school, and (2) the social dynamics of classrooms or school environments, including peer group norms and values and the nature of teacher–student interactions.

Child Characteristics and Deviation from Peer Norms or Values

Contemporary researchers have tended to conceptualize peer social exclusion as a consequence of an individual's propensity to deviate from or violate peer group norms (Mikami, Lerner, & Lun, 2010). A distinction has been drawn between descriptive and injunctive norms (Lapinski & Rimal, 2005), with descriptive norms referring to characteristics that are observed to be typical across group members (e.g., communal behavior patterns, perceptions, or attitudes). Injunctive norms, by contrast, are defined in terms of shared values, or the extent to which group members hold similar perceptions about the acceptability of specific behaviors, personal characteristics, beliefs, etc. In research on peer exclusion, investigators have recognized the importance of both types of peer norms, but it would appear that the latter concept (i.e., injunctive norms, with an emphasis on an individual's violation or deviation from peer values) figures prominently in modern conceptualizations and the measurement criteria that are utilized in research on peer social exclusion. A key assumption is that, during particular developmental periods peers attend to some child characteristics more than others (i.e., those relevant to their interests, needs, tasks), and when a child's salient attributes are perceived to be different from what is typical or valued, they may respond by excluding such children.

Findings from initial studies suggested that social exclusion as measured by peer group rejection was correlated with variability in many types of child characteristics, including physical attractiveness, body builds, family backgrounds, race, gender, and names (Asher, Oden, & Gottman, 1977). Later work, however, revealed that many of these findings said more about the concomitants than the antecedents of children's social exclusion because investigators tended to evaluate links with child characteristics after children had become accepted or rejected members of their peer groups. Researchers responded to this criticism by focusing on malleable child attributes—primarily children's behaviors in peer contexts—and by designing studies in which it was possible to observe children's interactions with peers before they became accepted or rejected by their peer group (e.g., Dodge, 1983).

Three types of child behavior received the most attention in studies of the behavioral antecedents of children's peer acceptance and exclusion: (1) *prosocial behaviors* (e.g., helping, sharing), (2) *aggressive behaviors* (e.g., hitting, fighting), and (3) *asocial behaviors* (e.g., social withdrawal, playing alone). Of these behaviors, aggressive and asocial acts have been construed as most likely to violate peer group norms. Consistent with this assumption, investigators have worked from the premise that aggression leads to exclusion because it is costly for children's peers (causes fear, pain, etc.) and deprives them of sought-after psychological resources (e.g., reliable alliance, social support). Children prone to asocial behavior are seen as likely to be excluded because they burden their partners by being unskillful and fail to maintain interactions. By contrast, prosocial actions seldom create interpersonal costs and often benefit partners.

These premises have received considerable empirical support. A substantial body of evidence indicates that children's use of prosocial behaviors, such as friendliness, cooperation, and helping, predicts their acceptance in peer groups and is

inversely related to social exclusion (Ladd, 2005). Conversely, aggressive behaviors, whether expressed directly (i.e., overt or confrontational aggression) or indirectly toward peers (i.e., covert, social, or relational aggression), repeatedly have been found to predict social exclusion (Card, Stucky, Sawalani, & Little, 2008). On the basis of these findings, many researchers have concluded that aggression, particularly in childhood, is one of the strongest and most reliable predictors of social exclusion (Card et al., 2008; Heilbron & Prinstein, 2008).

The link between asocial behavior and peer group rejection is less clear because there appear to be multiple ways in which children can be asocial in peer contexts. Investigators have researched several types of asocial behavior, often by studying subtypes of withdrawn children (e.g., anxious-solitary; unsociable), and have attempted to ascertain the level of risk for exclusion that is associated with each type (Gazelle & Ladd, 2003). Evidence suggests that, of the types of asocial behavior children display, the combination of solitary and anxious behaviors create the greatest risk for peer exclusion, particularly during middle childhood and beyond (Coplan & Rubin, 1998; Ladd & Troop-Gordon, 2003).

Classroom Environments and Dynamics

As early as the 1970s, researchers recognized that more than just children's social-personal characteristics were related to peer social exclusion in school. Investigative discoveries began to show that certain features of classroom environments and the interpersonal dynamics that occurred within them also were linked with peer social exclusion. Among the first to chart such linkages, Hallinan (1976) reported that social exclusion could vary with the organizational structure of children's classrooms. Results showed that there were fewer excluded children in open classrooms than in traditional classrooms.

Among the classroom features that have been studied in recent years are peer group compositions and teacher practices. In research on classroom compositions, researchers have explored variability in classmates' behavior, race, and gender. Those who researched classroom behavioral norms (Chang, 2004; Sentse, Scholte, Salmivalli, & Voten, 2007; Wright, Giammarino, & Parad, 1986) found that children who are behaviorally at risk for exclusion (e.g., they are aggressive or withdrawn among peers) are less likely to be excluded when the majority of their classmates engage in similar behaviors (i.e., attend classes in which aggressive or withdrawn behaviors are more the norm). Studies of classroom race and gender compositions suggest that children of different races (e.g., African-American, Caucasian) are more likely to be excluded when they attend classrooms where members of their race are in the minority (e.g., Jackson, Barth, Powell, & Lochman, 2006). Likewise, in coeducational classrooms, it is common for boys to be excluded by girls and vice versa (Dijkstra, Lindberg, & Veenstra, 2007).

Teacher behaviors, relationships with students, and instructional methods have been the principal foci of research on teacher practices. Much of this work is guided by the premise that teachers are role models, and children look to their teachers' actions, feelings, and instructional behaviors to understand how they should feel

about and treat each other (e.g., teachers who are positive and equitable toward everyone model social inclusion). A small body of evidence has accrued on teachers' classroom behavior and relationships with students. Both experimental and observational evidence suggest that excluded children are better liked by peers when instructors act positively toward all students (e.g., egalitarian in their use of praise), and toward excluded children in particular (White & Kistner, 1992). Other findings imply that children are less likely to be excluded by classmates when teachers have primarily positive relationships with their charges, and when excluded children are liked by their teachers or classmates perceive them to be liked by teachers (Hughes & Kwok, 2006). Studies of instructional methods suggest that children are less likely to be excluded when teachers are accepting of children's diverse learning styles and rates, and refrain from grouping children hierarchically by achievement levels (Donohue, Perry, & Weinstein, 2003).

Does School-Based Social Exclusion Affect School Engagement and Achievement?

Although the origins of school engagement are diverse (Ladd & Dinella, 2009), recent theory and evidence point to the importance of interpersonal factors such as the types of relationships that children form with classmates and teachers (Ryan & Ladd, 2012). Classroom peer relations, including social exclusion, increasingly have been linked with indicators of school engagement, suggesting that peers may play a critical, if not unique, role in the behavioral, emotional, and cognitive orientations that children develop toward school. What is known about the association between social exclusion and school engagement largely has come from studies of children who are ostracized, or consensually disliked by their classmates (i.e., peer rejection).

Investigators have worked from the assumption that peer rejection does influence children's school adjustment and have devised models for the purpose of specifying processes that might account for this relation. Conceptually, the principal task has been to explain how peers' sentiments (i.e., dislike felt toward specific children), themselves not directly observable, can affect the school adjustment of rejected children (Buhs & Ladd, 2001; Bukowski, Hoza, & Boivin, 1993; Coie, 1990).

Progress in model specification, development, and testing is perhaps most apparent in recent attempts to examine the association between peer rejection and specific aspects of children's school engagement and achievement. On the basis of propositions advanced by Coie (1990), Buhs and Ladd (2001) proposed a model in which it was hypothesized that the effects of peer rejection on children's achievement is mediated through two processes: (a) the negative behavioral treatment that rejected children receive from peers, and (b) resulting changes that negative treatment, such as social exclusion, causes in children's classroom participation.

The specific premises upon which this model was constructed can be summarized as follows (Buhs & Ladd, 2001): First, peers express the dislike they feel toward

rejected children by treating them more negatively than other classmates and, once manifested, these negative and exclusionary behaviors serve as visible markers of peer rejection for both the larger peer group and for rejected children. Second, once children are "marked" by peer rejection, or behavioral manifestations of it, peers increasingly exclude them from classroom peer activities. Broader, group wide social exclusion occurs because, as peers become aware of children who are often excluded, they tend not to associate with these children and prevent them from participating productively in classroom activities. In cases where excluded children are participants in classroom activities (e.g., teacher-assigned groups), they may be subjected to further ostracism; peers, for example, may minimize their roles or limit their contributions to group work. Moreover, excluded children seek to disengage themselves from classroom activities as a way of avoiding further exclusion.

Third, disengagement from classroom activities negatively impacts children's learning, which ultimately leads to lower levels of achievement. A related hypothesis is that peer exclusion impairs school performance because, when children's participation is reduced or hindered, they are deprived of the interpersonal processes (e.g., peer support, tutoring, inclusion in study groups, etc.) that facilitate learning and achievement (Buhs, Ladd, & Herald, 2006). It is also possible that social exclusion engenders negative intrapersonal processes, such as poor self-regulation and negative emotions that, in turn, impair learning because children attend to these processes rather than focusing on their schoolwork.

Consistent with these premises, data show that socially excluded children often become marginalized from the mainstream of peer activities (Ladd et al., 1990), become disengaged from classroom activities (Buhs & Ladd, 2001), and are prohibited from taking part in classroom activities (Buhs et al., 2006). Early peer rejection, occurring at school entry (i.e., kindergarten), has been shown to predict problems such as negative school attitudes, school avoidance, and underachievement during the first year of schooling (Ladd, 1990; Ladd, Birch, & Buhs, 1999; Ladd & Burgess, 2001).

Later, during the elementary years, evidence indicates that social exclusion can become persistent (i.e., chronic across multiple school years) and that its duration forecasts the stability and severity of children's school disengagement. Ladd, Herald-Brown, and Reiser (2008) traced children's movement in and out of classroom peer rejection across all of the grade school years (i.e., kindergarten through grade 6) and found that, regardless of whether children were rejected during the early or later years of grade school, longer periods of rejection were accompanied by lesser growth in classroom participation. The most serious patterns of disengagement were found for children who were continuously excluded throughout grade school. By contrast, children who moved out of rejection and toward acceptance by their classmates were more likely to show gains in classroom participation.

Perhaps the strongest support for the exclusion-disengagement hypothesis, however, comes from studies in which investigators have examined both peer group rejection (i.e., being disliked by the majority of one's' classmates) and peers' exclusionary behaviors (i.e., passive and active behavioral exclusion). In a longitudinal study spanning kindergarten through fifth grade, Buhs et al. (2006) used sociometry to measure peer rejection and teacher ratings to assess behavioral exclusion.

They discovered that peer rejection anteceded peers' exclusionary behaviors which, in turn, mediated across-grades associations between peer rejection and classroom participation. Once rejected, children were subjected to peers' exclusionary behaviors and, over time, these exclusionary actions, more than rejection (disliking), forecasted children's disengagement from classroom activities.

Other data imply that the effects of social exclusion on children's engagement or opportunities for participation in peer activities may be pervasive within the school context and long lasting. Disliked or rejected children appear to exhibit higher levels of disengagement not only in relatively structured activities that occur in classrooms (e.g., cooperative learning groups; Furman & Gavin, 1989; Ladd et al., 2008), but also in relatively unstructured activities that occur outside the classroom (e.g., recess, playground periods; Asher et al., 2001; Ladd et al., 1990). For example, within the context of classroom peer activities (e.g., cooperative learning groups), disliked children are often the last to be chosen by peers for group work, and even when assigned to learning activities by teachers, these children may remain isolated (Blumenfeld, Marx, Soloway, & Krajcik, 1996). Further, findings from long-term longitudinal studies link early-occurring peer group rejection with later forms of school disengagement (e.g., truancy, dropping out of school) and cumulative academic deficits (Ladd, 2005).

Taken together, this evidence suggests that peer social exclusion has adverse consequences for children's school engagement and achievement. It appears that classroom peer rejection is linked with behavioral forms of exclusion that not only decrease children's opportunities to participate in classroom learning activities, but also make it unlikely that they will receive the forms of peer support that are needed to achieve in school.

Does School-Based Social Exclusion Affect Children's Psychological Adjustment?

Social exclusion by peers also has been studied as an antecedent of children's psychological adjustment, including both internalizing (e.g., loneliness, depression) and externalizing (e.g., misconduct, delinquent behavior, substance abuse) problems. Those who have investigated these linkages have examined peer group rejection's associations prospectively with internalizing and externalizing symptoms. The models and hypotheses that have guided this work resemble those that underlie research on exclusion and children's school adjustment. To be specific, it has been postulated that: (1) rejection by one's classmates exposes children to stressors such as exclusionary behaviors (e.g., passive and active exclusion) that impair their mental health, and (2) longer exposures to peer group rejection, and associated rejection processes (e.g., peers' exclusionary behaviors), take a greater toll on children's mental health. This logic originated within theories of psychological risk, stress, and support in which it is argued that the likelihood that children will become maladjusted is increased by chronic relational risks and decreased by sustained relational resources (Lazarus, 1984). Accordingly, it has been hypothesized that prolonged rather than brief

exposures to relational adversity (e.g., chronic peer rejection, peers' exclusionary behaviors) will have greater consequences for children's psychological adjustment.

Prospective longitudinal studies largely have corroborated the hypothesis that peer rejection antecedes both internalizing and externalizing problems (DeRosier, Kupersmidt, & Patterson, 1994; Ladd, 2003; McDougall, Hymel, Vaillancourt, & Mercer, 2001). One group of investigators followed children who belonged to specific peer acceptance groups (popular, rejected, average, neglected, and controversial) from ages 9 through 14 and found that rejected children were more likely than popular children to exhibit externalizing problems such as misconduct, delinquency, and substance abuse (Ollendick, Weist, Borden, & Green, 1992). Another investigative team followed a small sample of peer-rejected 10-year-olds over a 7-year period and found that peer group rejection forecasted later dysfunction, but that this link was stronger when maladjustment was defined broadly (that is, when aggregated over multiple indicators) rather than narrowly (that is, when used to predict specific forms of maladjustment; Kupersmidt & Coie, 1990). It was also discovered that children who remained rejected for longer rather than shorter periods of time were more likely to suffer internalizing and externalizing problems later in their development (DeRosier et al., 1994; Ladd & Troop-Gordon, 2003). Links were also found between peer rejection and loneliness during both early and middle childhood (Cassidy & Asher, 1992; Crick & Ladd, 1993).

Another way that researchers addressed this question was investigating the relative importance of children's social exclusion (i.e., chronic peer rejection) relative to their behavioral dispositions (e.g., aggressive, withdrawn behavior) as predictors of emerging psychological adjustment problems. Ladd (2006) examined the predictive relations among children's aggressive or withdrawn behaviors, peer group rejection, and psychological maladjustment across the 5–12 age period. Results showed that, when evaluated in conjunction with aggressive behavior, peer rejection was a stronger predictor of children's externalizing problems during the early rather than the later grade school years. By the later grades, peer rejection's power to predict externalizing problems diminished whereas the predictive efficacy of children's aggressive behavior strengthened. When peer rejection was evaluated in conjunction with withdrawn behavior, it was found to predict internalizing problems. Thus, peer rejection was the stronger predictor, and relative to withdrawn behavior, its ability to forecast internalizing problems improved as children matured. That is, not only was peer rejection a significant predictor of internalizing problems in the early grades, but its predictive power increased as children matured. These findings imply that peer rejection's role as an antecedent of internalizing problems becomes progressively more important over the course of children's development.

Investigators also have begun to examine the duration or chronicity of children's exposure to peer exclusion in school settings, often in relation to their behavioral dispositions. In a study conducted by Ladd and Burgess (2001), investigators found that, compared to initial measures of children's behavior and peer relationships (in kindergarten), scores representing the *chronicity* of their aggressiveness and the *duration* of their peer group rejection across the primary grades were better predictors of adjustment. After controlling for peer group rejection in kindergarten (and other relational risks) and the chronicity of children's aggressiveness over several

grades, it was found that longer periods of peer group rejection independently predicted increases in children's attention problems. By contrast, children with longer histories of peer group acceptance were less likely to develop attention problems.

In a follow-up study conducted from kindergarten to grade 4, investigators examined the contributions of children's behavioral dispositions (i.e., aggressive, withdrawn) and their histories of peer group rejection to their psychological adjustment (Ladd & Troop-Gordon, 2003). Central to this investigation was the hypothesis that children who are socially excluded over longer periods of time (e.g., chronic peer group rejection) have greater exposure to negative relational processes (e.g., sustained ostracism), and that the accumulation of such experiences is a more powerful risk factor than are the adversities present in their contemporary peer relationships. It was discovered that, for aggressive children, chronic more than current peer group rejection predicted later misconduct or externalizing problems. Thus, children prone toward risky behavior—particularly aggressiveness—were most likely to develop later adjustment problems if they also had longer histories of peer rejection. Because these findings were adjusted for the nature of children's concurrent peer relationships, the results were consistent with the hypothesis that chronic peer exclusion, more than the strains of contemporary peer relationships, antecede later maladjustment.

In recent years, investigators have recognized the limitations of unidirectional hypotheses and have begun to consider the possibility that peer social exclusion may be both a cause and a consequence of children's psychological maladjustment. Whereas past research has been dominated by the premise that social exclusion drives maladjustment, contemporary investigators have begun to consider the hypothesis that depressive symptoms drive or transact with poor peer relations over time (Brendgen, Vitaro, Turgeon, & Poulin, 2002; Chen & Li, 2000; Sweeting, Young, West, & Der, 2006).

A few studies have been published in which researchers have examined the premise that children's psychological adjustment problems cause them to be socially excluded by peers (a disorder-driven perspective; see Ladd, 2006). For example, in a study of Chinese junior high school students, Chen and Li (2000) found that self-reports of depressive symptoms negatively predicted social preference (i.e., degree to which children were accepted vs. rejected by peers) 2 years later when controlling for baseline social preference. Consistent with these findings, Brendgen et al. (2002) reported that, among a sample of fourth through sixth graders, membership in a depressive subgroup predicted lower self-perceived social acceptance 6 months later.

In a more recent study, Kochel, Ladd, and Rudolph (2012) longitudinally examined the network of associations between depressive symptoms and peer group rejection with a sample of fourth through sixth graders. Results, stemming from a systematic examination of nested structural equation models, yielded support for a symptoms-driven model whereby depressive symptoms predicted peer rejection. No support was found for linkages representing other directions of effect, including an interpersonal risk model (i.e., peer rejection predicting depression) or transactional models (i.e., reciprocal or bidirectional effects). These findings were consistent with "scar" models of depression (Rohde, Lewinsohn, & Seeley, 1990; Rudolph, 2009), which suggest that depressive symptoms not only exert proximal adverse effects on

youths' interpersonal relationships but also interfere with the developmental maturation of relationships in ways that create longer-term social difficulties.

Does School-Based Social Exclusion Affect Children's Perceptions of Peers?

Another hypothesis that has garnered research attention is that peer group exclusion affects the beliefs that children develop about others and, in particular, their generalized beliefs about peers. The logic behind this premise is that children's intrapersonal perceptions develop from recurrent or salient social experiences (e.g., Crick & Dodge, 1994) and that the experiences associated with peer exclusion (e.g., ostracism, rejection) are likely to cause children to perceive peers, in general, as unsupportive and untrustworthy. Consistent with the idea that exclusion is associated with children's peer perceptions, excluded children report more generalized negative views of their peers than do non-excluded children (Ladd & Troop-Gordon, 2003; MacKinnon-Lewis, Rabiner, & Starnes, 1999; Rudolph & Clark, 2001; Rudolph, Hammen, & Burge, 1995). In one short-term longitudinal study, MacKinnon-Lewis et al. (1999) found that less accepted boys held more negative views of peers 6–9 months later than did well accepted boys.

In a recent study, Ladd, Ettekal, Kochenderfer-Ladd, Rudolph, and Andrews (2014) examined the development of early adolescents' perceptions of peer trust and support in the context of chronic social exclusion across grades 5 through 8. The generalized perceptions that adolescents developed about peers' relational characteristics (e.g., peer support, trustworthiness) were examined for youth who evidenced chronic maladaptive behaviors (i.e., aggressive, withdrawn), chronic peer group rejection, and combinations of these risk factors. Growth mixture modeling identified five such groups that were labeled chronically rejected, chronically aggressive, chronically withdrawn, chronically aggressive-rejected, chronically withdrawn-rejected, and low-risk. Adolescents in the low-risk group were not aggressive, withdrawn, or rejected at any time point and served as the reference group in analyses. Results revealed that both enduring behavioral risks (i.e., chronic withdrawn or chronic aggressive behavior) and chronic peer group rejection were linked with differences or changes in adolescents' perceptions of their peers' supportiveness and trustworthiness across the early adolescent age period. For chronically rejected youth, the belief patterns that emerged differed depending on the type of chronic behavioral risks they displayed.

Chronically withdrawn-rejected youth, as they entered adolescence, were inclined to see peers as unsupportive toward themselves, but not necessarily untrustworthy as persons. However, across adolescence (i.e., the 4-year span of this investigation), results showed that chronically withdrawn-rejected adolescents—unlike low-risk adolescents—developed significantly more negative views of peers in both perceptual domains. That is, the trends evidenced for these adolescents included an increasingly negative construal of peers' supportiveness and a declining appraisal of

peers' trustworthiness. These findings suggest that, when chronically withdrawn youth are also chronically rejected, they not only develop less positive views of peers' supportiveness (i.e., toward themselves) but also downgrade their perceptions of peers' trustworthiness as persons (i.e., general traits or social orientations).

Chronically aggressive-rejected adolescents differed from their chronically withdrawn-rejected counterparts in that they were less likely to see peers as supportive or trustworthy from the study's inception (early adolescence), and they maintained these beliefs across the study's longitudinal time frame (grades 5–8). Given past evidence (Ladd, 2006), it seems likely that chronically aggressive-rejected adolescents' rejection by peers was longstanding (perhaps throughout elementary school) and, if so, this experience may have already shaped their perceptions of peers' supportiveness and their view of peers' trustworthiness. Continued chronic rejection throughout adolescence likely reinforced these perceptions or served to sustain chronic aggressive-rejected adolescent's preexisting negative peer perceptions across time.

Conclusion

The empirical study of social exclusion by peers within school settings began in the early decades of the twentieth century when investigators became concerned about children who were "least liked" or treated as "outsiders" by their contemporaries. Across the ensuing years, two investigative paradigms emerged, each of which was driven in part by ideas and methodologies that advanced researchers' conceptualization, measurement, and discoveries about this phenomenon. In one of these paradigms—the sociometric tradition—peers' sentiments toward individual members of their peer group became the focal point for understanding and assessing social exclusion. Essentially, exclusion was thought to be a consequence of peer group rejection, which was manifested in peers' sentiments. From an assessment perspective, exclusion was assumed to occur when it could be established that one member of a peer group was roundly disliked by the majority of his or her companions.

In the second of these paradigms—the behavioral exclusion tradition—peers' actions (in passive and active forms) toward individual members of their peer group became the focal point for understanding and assessing social exclusion. Exclusion was conceived as having proactive and reactive forms that were manifested by peers behaviorally in the context of peer activities. Active exclusion entailed rejecting responses (e.g., rebuffing a child's overtures) and passive exclusion largely referred to avoidant behaviors (e.g., ignoring, overlooking a child). From this perspective, a child was socially excluded when he or she frequently was the recipient of these behaviors.

Empirically, the first of these traditions has been the more productive of the two. Peer group rejection, researched via sociometric methods, has been the dominant construct used by past and current researchers to characterize and study social exclusion in children's school peer groups. Across the decades, researchers have

devised more precise and sophisticated definitions for this construct and developed more refined data collection methodologies and classification schemes for identifying rejected children.

Even though the concept of behavioral exclusion emerged at nearly the same time as the construct of peer group rejection, comparatively its conceptual and empirical progression has not kept pace. Only in recent years have investigators revived this perspective and begun to investigate peer exclusion as a behavioral phenomenon. Consequently, there is a need to rethink and more carefully specify, operationalize, and research the parameters of this construct (i.e., theoretical specification, measure development, construct validation), and to undertake additional studies of its role in children's social relations and adjustment.

Advances also are likely to be achieved when investigators integrate both of these constructs (peer group rejection *and* behavioral exclusion) in their theories about social exclusion and its effects on children, and include measures of both constructs in their investigative designs and assessment protocols. Thus far, it has been rare for investigators who study social exclusion in school settings to include measures of peer group rejection and behavioral exclusion in the same study. This state of affairs has led, perhaps unfortunately, to the creation of largely distinct lines of research and empirical literatures. As theory evolves and incorporates both constructs (Buhs et al., 2006), it will be essential for those who study peer social exclusion to devise testable, process hypotheses about the interface and joint contributions (e.g., additive, mediated, moderated) of peers' rejecting sentiments (i.e., peer group rejection) and peers' rejecting behaviors (i.e., behavioral exclusion) to child development.

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Research in Work and Organizational Psychology: Social Exclusion in the Workplace

Jane O'Reilly and Sara Banki

For the vast majority of employees, considerable amount of time at work is spent while in the company of others. Our daily interactions with our colleagues ultimately serve to either satisfy or threaten the social needs we have as human beings. Recognized as being one of the most fundamental social needs is the need to belong; the need to affiliate and be socially accepted by those around us (Baumeister & Leary, 1995). It is perhaps not surprising then that the nature of employees' interactions with their colleagues, for better or worse, can have a powerful impact on their personal well-being, attitudes towards their job, and job performance and behaviors.

While a number of toxic social interactions at work can impede an employee's sense of belonging, the most harmful experiences involve those which ultimately serve to socially exclude an employee (J. O'Reilly, Robinson, Berdahl, & Banki, 2015). Social exclusion in the workplace has been studied under a variety of constructs, including exclusion (Hitlan, Cliffton, & DeSoto, 2006; Hitlan & Noel, 2009; Scott & Thau, 2013), ostracism (Ferris, Brown, Berry, & Lian, 2008; Robinson, O'Reilly, & Wang, 2013), thwarted belongingness (Thau, Aquino, & Poortvliet, 2007), organizational shunning (Anderson, 2009), and language exclusion (Hitlan, Kelly, Schepman, Schneider, & Zárate, 2006). What unites each of these constructs is that they focus on interactions that serve to socially avoid, ignore, and/or reject an organizational member. Forms of social exclusion are not uncommon in the workplace. For example, in a survey study of 1300 participants, 71 % indicated they had

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experienced at least one of ten acts of exclusion in the previous 6 months (J. O'Reilly et al., 2015). Over a 5-year period, 66 % of employees reported having received the silent treatment at work at least once (Fox & Stallworth, 2005). Furthermore, in a 2013 poll, 43 % of employed Americans reported that *cliques*, defined as tightly knit social groups that socialize heavily amongst themselves and exclude others, are a problem in their workplace (Smith, 2013).

In this chapter, we detail the broad research that has been conducted on social exclusion in the workplace. Although we acknowledge that exclusion in the workplace can occur through formal mechanisms, such as via organizational policies and procedures, we constrain our discussion to exclusion accomplished through social interactions (or, rather, often times through a complete lack of social interaction). Indeed, perhaps the most formal, overt, and absolute form of exclusion in a workplace setting is being fired from one's job. However, we focus our attention on exclusion that is accomplished through more informal means; in social interactions amongst two or more organizational members. We start by examining how social exclusion is conceptualized and researched in an organizational context, and discuss some of the identified reasons for why it occurs. We then review the impact of being socially excluded at work, including a focus on both the psychological impact and the impact on employee behavior and productivity. In this section, we pay special attention to recent research that has attempted to explain why some employees will try to reintegrate themselves into the social fabric of their organizations following social exclusion, while others will withdraw or even lash out as a result of being socially excluded. We then discuss the managerial implications of social exclusion and how it can potentially be prevented or eliminated.

Workplace Social Exclusion: Conceptualization and Manifestations

In organizational research, social exclusion is generally studied under the broader rubric of workplace mistreatment, alongside other constructs that similarly capture antisocial behaviors that can cause psychological and emotional harm to a target, such as aggression (Baron & Neuman, 1996), harassment (Bowling & Beehr, 2006), social undermining (Duffy, Ganster, & Pagon, 2002), interpersonal deviance (Bennett & Robinson, 2000), and bullying (Rayner & Hoel, 1997). Workplace social exclusion, broadly, can be distinguished from these other forms of mistreatment because it more specifically refers to any experience in which an employee perceives as though he or she has been ignored, avoided, and/or rejected by at least one other organizational member, and experiences a thwarted sense of belonging as a result.

Workplace social exclusion is often studied from the targets' perspective and can be manifested through a broad range of behaviors and social interactions. Within a workplace context, social exclusion can occur purely within the social sphere, such as when employees fail (or refuse) to invite a colleague to a social outing, coffee break, or lunch. In addition, workplace social exclusion can occur when employees

are excluded or ignored in work-related tasks, such as when one is left off an important e-mail chain, when employees begin a meeting without a certain colleague present, or when employees ignore a colleague's suggestions or requests (Robinson et al., 2013). Similar to being left out of social events, social exclusion in work-related tasks can also have repercussions on an employee's sense of belonging and feelings of acknowledgement at work.

Experiences of workplace social exclusion can sometimes be overt and explicit. For example, one employee might directly tell another that he or she is not welcomed to join the group for happy hour drinks after work. Relatedly, a boss might tell an employee to leave the room in the middle of an important meeting. However, much of the research attention on social exclusion in the workplace has focused on more subtle acts, in the form of *workplace ostracism*, defined as the perceived experience of being ignored or avoided at work (Ferris et al., 2008; Robinson et al., 2013). Subtle forms of ostracism might include feeling as though others go silent when you enter the room, having your greetings go ignored, being the target of the silent treatment, or being treated as though you do not exist. Ostracism is marked by interpersonal acts of omission rather than acts of commission (Ferris et al., 2008; Robinson et al., 2013). Overt acts of mistreatment, such as being verbally put down, berated, or insulted, while psychologically detrimental to a target, are antithetical to the very nature of ostracism, which is characterized as passive behavior. Overt acts of mistreatment still serve to socially engage and acknowledge the presence of a target, albeit in a decidedly negative way. By contrast, ostracism does not interpersonally engage a target; in effect, the target's presence is not acknowledged. In other words, negative acts of commission are accomplished through putting a person through an 'unwanted' or unpleasant experience, whereas negative acts of omission are accomplished by denying a person a 'wanted' or desirable and expected interpersonal experience (J. O'Reilly et al., 2015). As a result, ostracism tends to be a more ambiguous experience for a target compared to more overtly hostile forms of mistreatment, and tends to be a stronger threat to one's sense of belonging and organizational membership (J. O'Reilly et al., 2015).

Some research has focused on more specific ways in which social exclusion can occur. For example, *language exclusion* (sometimes referred to as *linguistic ostracism*, see Dotan-Eliaz, Sommer, & Rubin, 2009) captures exclusion that occurs when others in one's presence speak a language that one does not understand (Hitlan, Kelly, et al., 2006). It is logical to assume that language exclusion is more likely to occur in culturally diverse and multilingual workplaces.

Furthermore, social exclusion can sometimes emerge in the form of informal discrimination (Madera & Hebl, 2013), such as when certain employees, because of their gender or race, are systematically excluded from certain social arenas of the business world. Women, for example, can face social exclusion when business decisions are made in contexts of the business-world characterized as "men's clubs"—social arenas deemed important for "male social bonding" (Burns, 1983). A classic example is the exclusion of women when business deals are made on the golf course (a typically male-dominated activity). Recognizing this potential source of social exclusion, many business schools offer golf lessons specifically to female students.

Social arenas that exclude certain employees because of their gender or race deny these employees important networking and career advancement opportunities and can detrimentally impact their perceived acceptance and value in their organization.

Interpersonal social exclusion can also be manifested through nonverbal behaviors (Hebl, Foster, Mannix, & Dovidio, 2002; King, Shapiro, Hebl, Singletary, & Turner, 2006). Like the experience of workplace ostracism, nonverbal behaviors that convey one does not belong are often subtle and ambiguous from the target's perspective. Within social interactions, one might seemingly acknowledge the presence of another through verbal communication, but use nonverbal cues to send a signal that the target is neither an accepted nor a valued organizational member. Such cues include avoiding eye contact with another to withhold acknowledgement, smiling very little to not at all when interacting with another, and spending less time in one's presence compared to time spent with others (Hebl et al., 2002; King et al., 2006). This work parallels findings in social psychology that have also shown that exclusion can be accomplished through nonverbal cues (e.g., gaze aversion) and impacts subsequent nonverbal communication patterns between individuals (Böckler, Hömke, & Sebanz, 2014; Wirth, Sacco, Hugenberg, & Williams, 2010). Relatedly, visually impaired employees can sometimes experience social exclusion when others around them use hand gestures, facial expressions, or body movements to convey a message without a consistent verbal message since they are often not privy to such nonverbal forms of communication (Frame, 2000).

Another important component of workplace social exclusion to consider is whether it stems from multiple people in one's work environment versus only a few individuals (Banki, 2012). For example, organizational shunning generally captures a situation in which an organizational member is excluded by a large proportion of other organizational members (Anderson, 2009). Similarly, the notion of cliques captures a social grouping of individuals that all exclude others who are not a part of the established clique. By contrast, there are times when an employee is excluded by only a few others. While all forms of social exclusion can be a painful experience for a target, whether an individual is socially excluded by most versus a small portion of others will impact his or her reaction (Chen & Williams, 2007; DeWall, Twenge, Bushman, Im, & Williams, 2010; Williams, Cheung, & Choi, 2000). For example, Banki (2012) found that when individuals are socially excluded by a small portion of others, they were more likely to attribute their situation to external rather than internal causes.

Finally, whether an employee perceives a particular interaction as exclusionary will depend on the specific context (Robinson et al., 2013). The social context determines one's expectations of socially appropriate and inclusive behavior. Thus, while we can understand social exclusion as specific interactions (or the absence of a particular wanted interaction), whether those acts are subjectively experienced as exclusionary versus neutral by the target will depend on the normative expectations dictated by the context. For example, one might not expect strangers in the office elevator to offer pleasantries as they enter; being ignored by an acquaintance or close colleague in the office elevator, however, is more likely to be perceived as an act of social exclusion. Furthermore, in reference to the aforementioned example of

a boss who explicitly tells an employee to leave a meeting, if such an experience is expected and normative in a particular organization, it likely will not be interpreted as rejection. While nearly all behavior in organizations must be understood in context (cf. Johns, 2006), other forms of mistreatment that are typically studied in organizations, such as being verbally threatened, belittled, or sabotaged at work, tend to more clearly violate societal-level norms of acceptable treatment (Bennett & Robinson, 2000; Folger, 2001). One implication of this acknowledgement is that when organizational or cultural norms are not well-understood in a particular environment, there is an increased likelihood of employees interpreting inadvertent acts as exclusionary (Robinson et al., 2013).

Why Social Exclusion Occurs in the Workplace

Research on the antecedents of social exclusion is relatively limited compared to the body of research that has explored its impact. Researchers have recognized, however, a myriad of reasons why someone might exclude another in the workplace. Social exclusion can be used as a means of conflict management, to cause another social pain, to indicate disapproval towards a colleague, to punish a colleague, or simply because of circumstances or oversight (Robinson et al., 2013). Workplace social exclusion is not defined by any particular intention and the rationale behind social exclusion can range from purposeful to completely unintentional (Robinson et al., 2013).

Consistent with the notion that social exclusion can be volitional, in a series of studies Wu et al. (2015) found that when employees' goals compete with their supervisor's goals, they are more likely to be ignored or avoided by their supervisor. The opposite is true for employees who have complementary goals with their supervisor. Wu et al.'s work emphasizes the role of relationship conflict in dyadic relationships as one identified antecedent of social exclusion. In addition, the "silent treatment" is understood as a means through which a person can decisively socially exclude another by withholding acknowledgement of that person, often used to interpersonally punish or bully a colleague, and is common in the workplace (Fox & Stallworth, 2005).

By contrast, in a survey study J. O'Reilly and Robinson (2010) found that 32 % of employed respondents indicated that they were left out of the social circle at work simply because they did not "fit in" and could not relate to their colleagues outside of work tasks. For example, age differences can inadvertently contribute to social exclusion, with employees who are particularly younger or older than the rest of their colleagues being less likely to feel socially integrated into their workplace (C. A. O'Reilly, Caldwell, & Barnett, 1989). Unintentional social exclusion through circumstances can also occur because of physical location. Remote workers, employees who work either temporarily or predominately outside of the physical office space, for example, sometimes report feeling socially excluded from their colleagues (Golden, Veiga, & Dino, 2008; Marshall, Michaels, & Mulki,

2007). It is also possible that employees with less power in an organization, such as those at lower hierarchical levels, tend to feel left out more than employees with power (Waytz, Chou, Magee, & Galinsky, 2015).

Finally, employees with disabilities can sometimes feel as though they have been left out because of both social (e.g., when coworkers do not communicate effectively with a visually impaired colleague) and physical (e.g., when a social event amongst coworkers is held at a location that is not easily accessible to an employee in a wheelchair) barriers, even though such barriers are not intentional on anyone's part (see Naraine & Lindsay, 2011). Thus, depending on the situation, workplace social exclusion can be consistent with definitions of mistreatment concepts such as bullying, aggression, or social undermining in that it can be purposefully meant to hurt another person, or, at other times, more akin to the notion of *workplace incivility*, defined as discourteous behavior with an ambiguous (or complete lack of) intent (Andersson & Pearson, 1999).

The Social Control Model of Exclusion

One model that has specifically focused on conceptualizing the antecedents of social exclusion is the social control model (Scott & Duffy, 2015; Scott & Thau, 2013). The social control model explains exclusion as a social tool groups can use to ensure that members comply with group norms and standards (Scott & Thau, 2013). Groups generally develop norms that facilitate their effectiveness in achieving group goals (Bettenhausen & Murnighan, 1991; Coleman, 1988). Individuals who violate those norms disrupt group functioning and potentially threaten group harmony and survival. Social exclusion is conceptualized as socially functional, and is used as a means of signifying disapproval of one's behavior and to prevent further harm to a group by encouraging social stability (Blau, 1964; Emerson, 1976; Williams, 1997). Extrapolating from the social control model, social deviants are more likely to experience social exclusion (Aquino & Thau, 2009).

The social control model suggests that while social exclusion may be a painful and harmful experience for the target, it can potentially have social benefits for those who are "doing" the excluding. Consistent with the victim precipitation model of workplace mistreatment (Aquino & Bradfield, 2000), employees who are aggressive, antisocial, or abusive can in turn motivate those around them to exclude them from social interaction. Just as weekly columnists will sometimes suggest to advice seekers to cut ties with the toxic people in their lives, avoiding or ignoring someone at work who is discourteous or hostile can protect one from the harmful psychological consequences of such behaviors. In a test of this model, Scott, Restubog, and Zagenczyk (2013) found that employees who engaged in uncivil behaviors towards their colleagues were more likely to be socially excluded, especially in groups with pervasive norms against uncivil behavior (Scott & Duffy, 2015). Those who are poor performers or who free-ride on others' hard work are also likely at a higher risk of experiencing social exclusion compared to good performers.

However, while social exclusion likely offers some adaptive individual-level and group-level benefits (Gruter & Masters, 1986; Kurzban & Leary, 2001), evidence from past research also suggests that using exclusion as a social tool to influence others' behavior can also be used for more insidious and likely maladaptive purposes. For example, some of the earliest work that identified social exclusion as a means of punishment is on *whistle-blowing*, defined as publically reporting or denouncing others' perceived unethical behavior (Near & Miceli, 1985). While whistle-blowers often provide a number of benefits, such as identifying and preventing unethical behavior in organizations, they defy group norms (albeit norms that are supportive of unethical behavior). This puts whistle-blowers at risk of experiencing social exclusion. In a report by the U.S. Merit Systems Protection Board (2011), 63.5 % of federal employee whistle-blowers surveyed reported being shunned by their coworkers and/or managers following their whistle-blowing actions.

In further support of the social control model, using social exclusion to control group member behavior can actually encourage unethical behavior or dissuade whistle-blowing activities (Pillutla & Thau, 2009). Thau and colleagues, for example, found that if group members perceived unethical behavior to be normative and a benefit to their group, and if they were at risk of experiencing social exclusion, they were more likely to engage in that normatively acceptable yet unethical behavior (Thau, Derfler-Rozin, Pitesa, Mitchell, & Pillutla, 2015).

The social control model can also be applied to explain social exclusion that is unlikely to offer social benefits to a group. For example, while groups will use social exclusion to punish members whose behavior violates group norms, research in social psychology has recognized that social deviants can also be those who are simply not a prototypical group member, regardless of their behavior or performance (Rudman, 1998). As a result, people who are different simply because of the social groupings they are a part of (typically those associated with stigma, such as race, nationality, gender, obesity, or sexual orientation depending on the context) are more likely to face subtle forms of interpersonal social exclusion (Madera & Hebl, 2013). "Punishing" individuals who are perceived to be social deviants simply because they are different from the prototypical group member can be done purposefully. However, social exclusion of non-prototypical group members can also be an unconscious, involuntary action (Dovidio, Glick, & Rudman, 2005). Subtle acts of exclusion, through both nonverbal and verbal communication, can "leak out" such that the actor does not consciously recognize that he or she is sending exclusionary cues (Hebl et al., 2002; Madera & Hebl, 2013). Even when unconscious and fleeting, subtle unintentional social exclusion can have a significant negative impact on the targets of such treatment (Singletary & Hebl, 2009). Having discussed the ways in which social exclusion is conceptualized in the organizational sciences, the manifestations it can take, and why it might occur, we now turn our attention to identifying the impact of workplace social exclusion.

The Impact of Workplace Social Exclusion

Research within social psychology has shown that even fleeting and seemingly minor instances of social exclusion can be a painful experience for a target (Wesselmann, Cardoso, Slater, & Williams, 2012). A host of empirical studies focused on understanding the psychological, emotional, and behavioral consequences of workplace social exclusion have established that (1) workplace social exclusion is a painful and detrimental experience for employees and (2) that the consequences of workplace social exclusion are similar to that of social exclusion in other contexts (Ferris et al., 2008; Hitlan, Cliffton, et al., 2006; Hitlan, Kelly, et al., 2006; J. O'Reilly et al., 2015). A complete discussion of these impacts is beyond the scope of this chapter (see Robinson et al., 2013, for a review), however, a few recent additions to the literature are noteworthy to mention. First, experiencing workplace social exclusion in its many forms has a significant negative impact on employees' sense of belonging (Scott, Zagenczyk, Schippers, Purvis, & Cruz, 2014), even to a greater degree than experiencing harassment, such as being belittled, insulted, or threatened by other organizational members (J. O'Reilly et al., 2015). While workplace social exclusion also thwarts the other three needs described by Williams' (1997) need-threat model of ostracism, including meaningful existence, self-esteem, and control over one's environment (Ferris et al., 2008), the need to belong is a particularly salient need in the workplace. In contrast to the other three, the need to belong is a fundamental need that can only be satisfied or threatened in the workplace through one's relationships and interactions with others (J. O'Reilly et al., 2015). Furthermore, decades of research in the organizational sciences have placed an emphasis on the importance of "inclusion" broadly as an important ingredient for employee well-being and motivation (see Shore et al., 2011, for a review). Consistent with the broader literature on social exclusion, the impact of workplace social exclusion on employees' sense of belonging has subsequent downstream effects on employees' well-being, work-related attitudes, and job performance. For example, across a number of studies, social exclusion is linked to poorer employee psychological well-being, organizational-based self-esteem, job satisfaction, commitment, and supervisor-rated performance, and higher employee stress, job tension, work-family conflict, and poor health symptoms (Ferris et al., 2008; Hitlan, Cliffton, et al., 2006; Hitlan, Kelly, et al., 2006; Liu, Kwan, Lee, & Hui, 2013; J. O'Reilly et al., 2015; Penhaligon, Louis, & Restubog, 2009; Scott et al., 2014). Also important for organizations is the relationship between social exclusion and turnover. In one field survey study, employees who experienced ostracism were significantly more likely to voluntarily leave their organization within 3 years compared to those who did not experience ostracism (J. O'Reilly et al., 2015).

Second, consistent with the broader literature on social exclusion (e.g., Williams, 2007; Williams & Govan, 2005), workplace social exclusion has the potential to trigger either antisocial or prosocial reactions. On the antisocial side, social exclusion is linked to interpersonal and organizational deviance (Ferris, Brown, & Heller, 2009; Thau et al., 2007), unethical behavior (Kouchaki & Wareham, 2015),

dishonesty (Poon, Chen, & DeWall, 2013), social loafing (Xu, Huang, & Robinson, 2015), and job withdrawal (J. O'Reilly et al., 2015). Social psychology research has also shown that the targets of social exclusion not only aggress towards those who exclude them but also towards unperturbed and passive bystanders, which has relevant implications for organizations (Gaertner, Iuzzini, & O'Mara, 2008; Twenge, Baumeister, Tice, & Stucke, 2001). Explanations for why social exclusion sparks antisocial behavior include resource depletion (Baumeister, DeWall, Ciarocco, & Twenge, 2005), negative emotions, particularly anger (Buckley, Winkel, & Leary, 2004; Chow, Tiedens, & Govan, 2008), negative social exchange (Zellars & Tepper, 2003), regaining a threatened sense of control (Gerber & Wheeler, 2009; Warburton, Williams, & Cairns, 2006), and hostile cognitions (DeWall, Twenge, Gitter, & Baumeister, 2009). Furthermore, physiological mechanisms might also contribute to the link between social exclusion and antisocial behavior (e.g., Blackhart, Eckel, & Tice, 2007; Kouchaki & Wareham, 2015; Stroud, Tanofsky-Kraff, Wilfley, & Salovey, 2000). For example, experiencing social exclusion is linked with increased physiological signs of tension, including increases in both systolic and diastolic blood pressure (Stroud et al., 2000).

On the prosocial side, social exclusion, under certain circumstances, can result in helping behavior (Xu et al., 2015), working harder (Williams & Sommer, 1997; albeit they found evidence for women only), and better overall performance (Jamieson, Harkins, & Williams, 2010). Consistent with the aforementioned social control model of social exclusion, scholars have purported that the targets of social exclusion might engage in prosocial behavior following exclusion as an attempt to be reintegrated into the social circle (Williams, 2007). In line with this explanation, research within the broader literature has shown that individuals who experience social exclusion are often willing to change their choices to conform to their group's decision in an attempt to be included (Carter-Sowell, Chen, & Williams, 2008).

In recent years, a number of organizational scholars have directed research attention to understanding the mechanisms that might, at the very least, buffer the impact of social exclusion on antisocial behavior, or even promote prosocial behaviors following social exclusion (for a review of further mechanisms investigated in social psychology, see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion"). Several broad mechanisms identified in the work and organizational psychology literature to date are attributions, identity, social benefits, and alternatives.

Attributions

An attribution lens has been applied to explain why targets of social exclusion might engage in prosocial versus antisocial behaviors. As previously noted, the motives behind social exclusion are diverse (Robinson et al., 2013) and the social context can have a significant impact on the attributions targets make regarding *why* they are socially excluded by others at work (Banki, 2012). In particular,

depending on the circumstances surrounding social exclusion, targets can either derive internal attributions (i.e., believe that they are socially excluded because of something they did or because of their own characteristics) or external attributions (i.e., believe that they are socially excluded because of others' characteristics; Banki, 2012). Targets of social exclusion often derive external attributions (Sommer, Williams, Ciarocco, & Baumeister, 2001), and it is possible that external attributions are more strongly linked to antisocial reactions whereas internal attributions contribute to prosocial reactions.

Factors that might influence whether targets of social exclusion attribute their experiences to external versus internal causes include whether a target is excluded by only a few or many others in his or her workplace and gender. Poulsen (2006), for example, found that women make more internal attributions for social exclusion than men do. Those who attribute social exclusion to internal causes (compared with external causes) experience a greater sense of rejection (Poulsen, 2006). When people attribute social exclusion to internal causes, they may blame themselves and perceive that their exclusion is a merited punishment; when they attribute it to external causes, they may not feel responsible for the exclusion, may not view it as legitimate, and may not feel as bad about the exclusion. In a related study, Williams and Sommer (1997) found that women worked harder in groups following social exclusion, whereas men engaged in social loafing following exclusion. The different attributions men versus women make following social exclusion, consistent with Poulsen's (2006) findings, can account for this difference. When targets of social exclusion make internal attributions (most likely women), they are more likely to blame themselves and negatively perceive their self-worth, and, as a result, they try to prove to their group members that they are a valuable group member.

Attributions of envy can also impact targets' reactions to social exclusion. Scott, Tams, Schippers, and Lee (2015) found that social exclusion prompted prosocial behavior in the form of citizenship behavior and ingratiation because targets perceived social exclusion as a signal of being envied. In other words, targets justified their experiencing of social exclusion by convincing themselves that they are better, more successful employees compared to their coworkers, and are treated differently as a result. It should also be noted that Scott et al. found that social exclusion had a negative impact on employees' well-being, regardless of their attributions of envy.

Identity

How a target of social exclusion defines his or her personal and social identity can also impact the extent to which he or she responds in antisocial versus prosocial ways. For example, Xu et al. (2015) applied a self-verification lens to investigate the potential positive impact of social exclusion on employee behavior. They proposed that social exclusion is a threat to employees' in-group identity and that when employees who strongly identify with their immediate workgroup are socially excluded, they are more likely to engage in positive behavior to reaffirm

their group-based self-view. They found support for their hypothesis such that employees with a strong in-group identity were more likely to engage in helping behavior and less likely to engage in social loafing following social exclusion compared with employees with a weak in-group identity.

Relatedly, whether employees derive their self-worth from their job performance can also moderate the relationship between social exclusion and problematic employee behaviors. More specifically, when employees derive their sense of self from their job, they are less likely to reduce the quality of their job performance and citizenship behavior (generally defined as a form of employee performance) following social exclusion (Ferris, Lian, Brown, & Morrison, 2015).

Social Benefits

When employees are able to clearly recognize the potential social costs associated with antisocial reactions to exclusion, and the potential benefits associated with prosocial reactions, they are more likely to respond in prosocial ways. For example, across three studies, Balliet and Ferris (2013) found that individuals with a stronger future-orientation (i.e., a concern about future outcomes) are less likely to reduce their prosocial behavior (in the form of helping behavior and contributions to a public good) following exclusion compared to those with a short-term orientation. They argued that future-oriented individuals recognize the potential social costs associated with reducing prosocial behavior following social exclusion. Furthermore, while social exclusion might lead to antisocial behavior, Derfler-Rozin, Pillutla, and Thau (2010) argued that the risk of social exclusion—that is, when one understands that he or she will likely be excluded for violating group norms but has not yet experienced exclusion—can result in normative behaviors that will serve to ward off social exclusion. Extrapolating to a workplace context, insecure coworkers might be eager and easily willing to offer their help or volunteer for different tasks in hope of reducing the potential for social exclusion. While this reaction can help the potential targets of social exclusion to avoid being excluded, one potential dark side of this phenomenon is that it can also lead to a potential target of social exclusion being taken advantage of by others in the workplace. For example, in one laboratory study, participants who were excluded were more likely to obey an unreasonable request (Riva, Williams, Torstrick, & Montali, 2014).

Alternatives

Finally, some scholars have recognized that the experience of social exclusion depletes targets' psychological and emotional resources and that alternative experiences that help to replenish one's resources can be applied to mitigating the negative impact of social exclusion (for a review of coping strategies to replenish

psychological resources, see chapter "Coping with or Buffering Against the Negative Impact of Social Exclusion on Basic Needs: A Review of Strategies"). For example, Scott et al. (2014) found that perceived organizational support mitigates the detrimental impact of workplace social exclusion. In this study, ostracism had a negative impact on work effort for the targets that felt weak organizational support, and not for the targets that felt strong organizational support. In the same study, the researchers found that support from family and friends actually amplified the negative impact of workplace social exclusion. The researchers argued that perceived support in the workplace contributed to work-related belongingness needs; however, support in an alternative context did not make up for the depleted resources as a result of social exclusion. Alternative resources do not need to come in the form of psychosocial resources. Mok and De Cremer (2016) found that activating thoughts of a material resource (e.g., money) can also mitigate the negative impact of social exclusion (for a review of money as a strategy to buffer against the impact of social exclusion, see chapter "Coping with or Buffering Against the Negative Impact of Social Exclusion on Basic Needs: A Review of Strategies"). One possible explanation for this finding is that priming the notion of money helps individuals feel more self-sufficient (Zhou, Vohs, & Baumeister, 2009).

Finally, drawing from work in social psychology, the targets of social exclusion can also seek out alternative social connections that will replace the belongingness needs threatened by the experience of social exclusion. Maner, DeWall, Baumeister, and Schaller (2007) have shown that targets of social exclusion were more eager to make friends than those who had not been excluded only when there was a hope of a face-to face interaction and no fear of negative evaluation. It is possible that finding adequate alternative social connections in the workplace will reduce the otherwise detrimental impact of social exclusion on target behaviors. However, research has also shown that when targets of social exclusion are eager to build additional relationships but also fear further social exclusion, they are less likely to respond positively (Vohs, Baumeister, & Chin, 2007). How this phenomenon plays out in a workplace setting requires additional empirical attention.

Despite the knowledge gained so far to explain why and when employees will engage in less antisocial behavior and more prosocial behavior following social exclusion, our knowledge on coping is still under-studied (cf. Scott et al., 2013). Having discussed some of the impacts of social exclusion, we now turn our attention to potential managerial solutions.

Managing Social Exclusion in the Workplace

Social exclusion, especially when it is informal, ambiguous, or subtle, can pose particular management challenges compared to other behaviors that are typically recognized as mistreatment. First, social exclusion can be difficult to spot in organizations, especially compared to more formally prohibited forms of mistreatment, such as harassment. For example, when one employee berates or

humiliates another, bystanders can often recognize that such behavior is hurtful and violates established ethical (and even legal) standards regarding how people should treat one another (Folger, 2001). Social exclusion, on the other hand, can in comparative terms be more difficult to assess from a bystander's point-of-view. We do not always consciously recognize when a colleague or supervisor has ignored or avoided another in our workplace.

Second, employees generally consider social exclusion to be a less detrimental experience compared to workplace harassment. For example, in one study, employed respondents indicated that they believed workplace ostracism was a less psychologically damaging experience compared to experiences such as being belittled, threatened, or insulted (J. O'Reilly et al., 2015, Study 1). This work is also consistent with research on empathy gaps, which has shown that it is difficult for bystanders to understand and recognize the pain others feel when they are socially excluded (Nordgren, Banas, & MacDonald, 2011). These lay perceptions of social exclusion stand in stark contrast to its actual impact (Ferris et al., 2008; J. O'Reilly et al., 2015). As a result, not only are employees less likely to recognize social exclusion towards others, but also less likely to be perturbed by others' experiences of social exclusion even when they do recognize it, compared to recognizing experiences of harassment.

Finally, in many circumstances, social exclusion can be more difficult to formally prohibit and punish in organizations compared to harassment (J. O'Reilly et al., 2015). While many organizations have adopted antiharassment policies to help curb mistreatment, it is often difficult to include social exclusion as a specific form of harassment because the intent behind social exclusion is often ambiguous (and indeed, social exclusion can often be accidental or unintentional). For example, the *Healthy Workplace Bill*, a social campaign aimed at encouraging organizations to adopt formal policies to reduce workplace harassment, focuses on three broad types of harmful behaviors: verbal abuse, offensive conduct, and sabotage; it not specifically include workplace social exclusion as a form of harassment. Similarly, legal definitions of workplace harassment often do not capture social exclusion as a means of mistreatment. In addition, in many circumstances it can be difficult for managers to adopt formal policies mandating employees to be socially inclusive. It is much easier for managers to reprimand employees for threatening or demeaning behavior than it is to reprimand employees for not inviting a colleague to lunch or refusing to welcome a colleague to drinks after work. That is not to say that social exclusion can never be addressed through formal policies and procedures. When social exclusion is systematic, overt, and occurs because of gender or race discrimination, for example, it may be possible to create formal rules that will curb such exclusion; furthermore, when social exclusion is clearly used as a means of harassment, such as following whistle-blowing, it might be comparatively easier to reprimand. But by and large, it is more difficult to use formal policies to prevent and reprimand social exclusion compared to acts of harassment in the workplace.

Despite the challenges associated with managing social exclusion in the workplace, understanding how to address and eliminate social exclusion is

important. Organizational scholars have pointed out that, as organizations adopt more stringent policies to eliminate workplace harassment, more informal forms of mistreatment that do not explicitly violate organizational rules, such as workplace social exclusion, will likely become even more prevalent in organizations (Cortina, 2008; Gaertner & Dovidio, 1986; Hebl, Madera, & King, 2008). Thus, social exclusion will continue to be a problem in certain organizations unless it is explicitly acknowledged and effectively managed.

The specific strategy one might adopt to eliminate workplace social exclusion will likely depend on why it is likely occurring in a specific context. However, in general, preventing and eliminating social exclusion in one's workplace is best accomplished by using positive human resource practices and informal social tools, such as training, leadership, and developing an inclusive environment, rather than predominately with prohibitive formal policies and procedures. A starting point for any organization wishing to eliminate social exclusion is to ensure all employees recognize the detrimental impact of social exclusion on both the individual target and workgroup relationships. While simple and subtle acts, such as not inviting a colleague to lunch, avoiding eye contact with a colleague, or walking by a colleague without offering a customary greeting, might seem innocuous, they are not. Employees must recognize that the opposite—simple acts of inclusion—can go a long way in helping a colleague to feel accepted and valued in his or her workplace. Below we discuss two related strategies organizations can adopt to effectively manage social exclusion: training programs and encouraging an inclusive environment.

Training Programs

Two broad types of training programs that can help reduce and prevent workplace social exclusion include interpersonal training programs and social skills programs. Interpersonal training programs focus on helping employees understand acceptable versus unacceptable interpersonal behaviors, and enhance interpersonal interactions amongst employees. These training programs focus on interactions at the group level, rather than on individual employees. One training program that has particular implications for workplace social exclusion is the *Civility*, *Respect*, *and Engagement in the Workplace* (CREW) intervention program (Leiter, Laschinger, Day, & Oore, 2011; Osatuke, Moore, Ward, Dyrenforth, & Belton, 2009). Compared to conventional interpersonal training programs that have focused on eliminating uncivil behaviors, CREW training programs are focused primarily on enhancing civil behavior in the workplace (Maslach, Leiter, & Jackson, 2012). The fundamental principle of CREW is to build a climate of "interpersonally valuing and being valued by others" in a workgroup (Osatuke et al., 2009, p. 385). Through the CREW intervention protocol, trained facilitators work with individual workgroups to develop customized and specific solutions to increase workgroup civility. Empirical research has shown that CREW training can enhance respect and civility in trained workgroups (Leiter et al.,

2011; Osatuke et al., 2009). CREW training can help reduce social exclusion for two reasons. First, it puts an emphasis on civil behavior, which includes being inclusive towards others and making sure colleagues feel valued and accepted. Depending on the specific needs of a group, social inclusion can be a main focus of the group's customized CREW program. Second, it can reduce disruptive and burdensome behaviors that can render an employee a target of social exclusion (as described by the social control model).

Conflict management skills training can also help reduce social exclusion. Organizational scholars have recognized that social exclusion can occur when employees are not equipped with the necessary social tools to manage conflict effectively (Robinson et al., 2013; Wu et al., 2015). Employees might avoid a colleague with whom they are having a problem with as a means of avoiding the conflict, not necessarily their colleague. The target of such social exclusion, however, might interpret his or her colleague's actions as having a malicious intent or may be disturbed by the ambiguous experience of being ignored. Past research has also shown that poor conflict management skills can trigger mistreatment (Aquino, 2000). Thus, effective conflict management skills can provide employees with the necessary interpersonal tools to handle conflict effectively and not resort to social exclusion as a means of managing conflict.

Finally, enhancing employees' emotional intelligence broadly can also potentially help reduce workplace social exclusion. Emotional intelligence captures one's ability to effectively identify, understand, and manage his or her own and others' emotions (Mayer & Salovey, 1997; Petrides & Furnham, 2003). Some research has established emotional intelligence as a skill, rather than a stable personality trait, that can be cultivated and learned even in adulthood (Kotsou, Nelis, Grégoire, & Mikolajczak, 2011). Emotional intelligence is positively correlated with a number of positive outcomes, including stress management abilities, social capital, and quality of interpersonal relationships (Kotsou et al., 2011). While little research has explicitly investigated the exact nature of the relationship between emotional intelligence and workplace social exclusion, there are several hypothesized reasons why enhancing employees' emotional intelligence will help reduce social exclusion. First, people with high emotional intelligence better understand how certain experiences will impact others' emotions. Thus, those with high emotional intelligence are more likely to recognize that social exclusion is a painful experience that will have a detrimental impact on one's sense of belonging. In effect, employees with high emotional intelligence are less likely to fall prey to the aforementioned empathy gaps. Second, because employees with high emotional intelligence generally develop more stable and higher quality relationships with others, they are less likely to be a burdensome or uncivil group member and thus less likely to become a target of social exclusion.

Creating an Inclusive Environment

In addition to training programs, organizations can help reduce and prevent social exclusion by fostering an inclusive interpersonal environment. A culture for inclusion is focused on recognizing, respecting, and valuing the contributions of each and every organizational member (Bilimoria, Joy, & Liang, 2008; Davidson & Ferdman, 2002; Roberson, 2006). A culture of inclusion exists when "people of all social identity groups have the opportunity to be present, to have their voices heard and appreciated, and to engage in core activities on behalf of the collective" (Wasserman, Gallegos, & Ferdman, 2008, p. 176). While often discussed in the context of organizational diversity, creating an inclusive culture extends beyond social exclusion linked solely to dissimilarity in gender, race, and sexual orientation. In part, organizations can contribute to an inclusive culture by creating policies and procedures that signify inclusion and acceptance of all organizational members and by effectively enforcing these policies and procedures (Gelfand, Nishii, Raver, & Schneider, 2007). However, effective leadership is ultimately required to ensure that certain inclusive policies and procedures are enacted in practice (Gelfand et al., 2007; Wasserman et al., 2008). Without commitment from those in leadership positions, initiatives that seek to eliminate social exclusion will likely fail (Cox & Blake, 1991). Training programs such as CREW can also help contribute to an inclusive culture.

Another practical way an inclusive environment can be accomplished is by fostering social cohesion, defined as organizational members' desire to be a part and remain a part of a workgroup (Kidwell, Mossholder, & Bennett, 1997). Organizational members who are a part of cohesive workgroups are more likely to extend care and concern to their fellow organizational members (Schachter, Ellertson, McBride, & Gregory, 1951). Leaders again play a large role in developing cohesive groups. In particular, leaders who lead by example and extend care and consideration to their employees are more likely to foster cohesion amongst their employees (Schriesheim, 1980). Leaders can also help engage employees and help build cohesion by organizing social events, building a strong group identity, and encouraging employees to interact outside of a pure work-related relationship (Deal & Key, 1998).

Conclusion

British film director Derek Jarmen once said, "Pain can be alleviated by morphine but the pain of social ostracism cannot be taken away." While it is perhaps easy to recognize that being ignored, rejected, or shunned by one's close family and friends is a painful human experience, we often fail to realize that experiencing social exclusion in any arena of social life, including the workplace, can be similarly detrimental. Employees often remark that they go to work to earn a paycheck, not to

make friends, but the social world of the workplace has an undeniable impact on employees' psychological and work-related well-being. Even when employees may not seek to develop deep and lasting friendships with their colleagues, given our fundamental human need to belong, all employees need to at least feel as though their colleagues accept and value their presence. And, as we have discussed here, experiencing social exclusion in the workplace thwarts such a need.

There are three main takeaways that we hope our review here has established for our readers. First, workplace social exclusion is a relatively silent form of mistreatment in organizations, at least compared to experiences of harassment. While it can be manifested through a myriad of behaviors, it is often an ambiguous experience for the target, who has trouble ascertaining whether he or she is being excluded intentionally, unintentionally, or, in some circumstances, even whether he or she is truly being excluded at all. Furthermore, it can be difficult for bystanders to recognize when others in their workplace are being excluded.

Second, while the experience of "simply" being left out of the social circle may seem innocuous, it is far from harmless. Social exclusion is a painful experience and has an unequivocal detrimental impact on employees' psychological well-being. As we have demonstrated here, however, the impact of social exclusion on employee behaviors depends. When employees attribute their exclusion to internal causes, identify strongly with their workgroup or work, and want to become reintegrated into the social circle, they might actually engage in more prosocial (or at the very least *less antisocial*) behaviors following exclusion. We should stress, however, that these results do not suggest that under certain circumstances social exclusion can be used as a management tool. Such results suggest that there are certain circumstances—based on individual differences and group norms—that buffer the impact of social exclusion on counterproductive behaviors. Organizations should strive to promote positive employee behaviors through other mechanisms rather than using exclusion as a motivational tool.

Finally, as the old adage says, the best defense is a good offense. Managing social exclusion is best accomplished by preventing it in the first place rather than dealing with its consequences. The social pain of social exclusion is difficult to mediate. Even if the impact of social exclusion dissipates over time, it is possible that the experience of social exclusion has lasting effects on an employee's future relationships with his or her colleagues or supervisors. Thus, organizational leaders need to be vigilant of this particular type of mistreatment, ensure that all organizational members recognize its impact, give employees the social tools needed to avoid engaging in it, and seek to build an inclusive environment to prevent it. We hope our review inspires researchers to develop an even deeper understanding of the antecedents and impact of this toxic workplace phenomenon and to encourage organizational leaders to eliminate and prevent social exclusion in their workplace.

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Research in Clinical Psychology: Social Exclusion and Psychological Disorders

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Maintaining positive and meaningful social connections is a basic human need (Baumeister & Leary, 1995). Accordingly, social acceptance is linked to physical and emotional well-being, and conversely, social exclusion is linked to a wide range of negative psychological consequences (see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion"). Consistent with these findings, researchers in clinical psychology have proposed that adverse social relationships contribute to the onset of various psychological disorders. Our goal in this chapter is to describe the current state of research on the role of exclusion in promoting the development and maintenance of adult mental disorders, identify limitations to the findings, and provide recommendations for future research.

There is a vast amount of research on the relation between social relationships and psychopathology. In the current chapter, we focus on the role of emotional exclusion, that is, perceiving oneself to be a less valuable member of a relationship or group, as opposed to physical exclusion. Our review of the literature emphasizes evidence derived from clinical samples and from longitudinal and experimental designs, which allow stronger conclusions as to whether exclusion promotes the development of psychopathology. However, disorders where there is a lack of research on exclusion (e.g., specific phobia, hoarding) are omitted.

Anxiety Disorders

Anxiety is clinically defined as apprehension about future events and is commonly associated with negative thoughts, physical sensations, and avoidance. Panic, another clinical concept, is defined as a sudden rush of fear stemming from

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perceived immediate threat. The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013), the major North American handbook for clinical diagnosis of psychological disorders, includes a variety of anxiety-related conditions differentiated by the specific content of the feared event. These include social anxiety disorder (SAD; anxiety about social situations), generalized anxiety disorder (GAD; uncontrollable worry), panic disorder (PD; anxiety about recurrent panic attacks), agoraphobia (fear of being overwhelmed in public places), and specific phobia (fear of specific objects such as animals or situations such as enclosed spaces). There is insufficient research on the link between exclusion and specific phobias to warrant even tentative conclusions, and hence, this disorder is not reviewed here. Two other conditions, obsessive compulsive disorder (OCD, uncontrollable intrusions and compulsive behaviors) and posttraumatic stress disorder (PTSD; ongoing cognitive, emotional, and behavioral symptoms due to traumatic events) are now viewed as distinct from the former disorders but until recently were treated as anxiety disorders and are included here.

Some studies examined exclusion across a range of anxiety disorders, with some research including depressive disorders as well. Longitudinal studies indicate that exclusion by parents and peers throughout childhood and adolescence predicts the later onset of anxiety disorders (e.g., Stapinski et al., 2014; van Oort, Greaves-Lord, Ormel, Verhulst, & Huizink, 2011; Yap, Pilkington, Ryan, & Jorm, 2014). Consistent with those findings, individuals with anxiety disorders report higher frequencies of parental and peer exclusion during childhood and adolescence (e.g., Hovens et al., 2010). Both mild (e.g., lack of parental warmth and peer liking) and severe (e.g., parental emotional abuse, peer victimization) forms of exclusion connoting that victims are not desired members of a relationship or group have been shown to predict anxiety disorders (e.g., Modin, Östberg, & Almquist, 2011; Spinhoven et al., 2010; Stapinski et al., 2014; van Oort et al., 2011). Cohort studies indicate that lower peer liking and parental abuse during childhood predict diagnoses of anxiety disorders and major depression up to 30 years later, which suggests that exclusion may have long-lasting effects (e.g., Modin et al., 2011). The effects of exclusion are generally found to be dose-dependent such that the type and frequency of exclusion predicts the severity of anxiety and number of anxiety and depressive disorder diagnoses (e.g., Hovens et al., 2010). Furthermore, exclusion is a unique predictor of anxiety disorders above and beyond life events not related to exclusion such as parental separation (Hovens et al., 2010) and depression (e.g., Spinhoven et al., 2010; Stapinski et al., 2014). We turn now to research on specific disorders.

Social Anxiety Disorder (SAD)

The effect of exclusion on SAD has received the most research attention among the anxiety disorders with longitudinal, experimental, and retrospective self-report studies all supporting a link between the two. SAD symptoms exist along a continuum, with

individuals who have extremely distressing and dysfunctional symptoms qualifying for a diagnosis. Hence, many studies have examined SAD symptoms, or social anxiety, using nonclinical samples. Longitudinal studies of nonclinical samples indicate that exclusion predicts increased social anxiety and, vice versa, that social anxiety predicts exclusion (e.g., Gazelle & Ladd, 2003). Conversely, one prospective study found that socially anxious children became less so after transitioning to middle school because this reduced their exposure to peers who bullied them in the past (Shell, Gazelle, & Faldowski, 2014). In experimental settings, individuals who have been excluded, by not being given the chance to participate in a game or by being told that a friend did not want to help the individual, became more reluctant to engage in and were more socially anxious in subsequent situations (Fung & Alden, 2016; Gazelle & Druhen, 2009).

Although few studies have compared the effect of exclusion on multiple anxiety disorders, there is emerging evidence suggesting that SAD may have a stronger link to exclusion than other anxiety disorders (e.g., McCabe, Miller, Laugesen, Antony, & Young, 2010; Spinhoven et al., 2010). For example, individuals with SAD retrospectively reported more instances of bullying and teasing compared to those with other anxiety disorders (e.g., McCabe et al., 2010). More research is needed to confirm this relationship.

In addition to promoting the development of social anxiety, exclusion may help to maintain symptoms. Some writers propose that individuals with SAD can become trapped in a negative interpersonal cycle in which social anxiety functions to elicit exclusion, which in turn perpetuates social fears (see Alden & Taylor, 2004). Reliance on *safety behaviors* and visible signs of nervousness are possible mechanisms linking social anxiety and ongoing exclusion. Safety behaviors are actions that the socially anxious person adopts with the intent of preventing negative social outcomes; however, such behaviors can paradoxically elicit exclusion (Plasencia, Alden, & Taylor, 2011; Taylor & Alden, 2011). For example, some individuals with SAD display subtle avoidance behaviors (e.g., low eye contact, less openness) that leads others to desire less future contact (e.g., Plasencia et al., 2011), thereby maintaining social anxiety. Displaying signs of nervousness can arouse discomfort in others and cause others to view them as different, thereby fueling avoidance of the anxious person (e.g., Luchetti & Rapee, 2014; Voncken, Alden, Bögels, & Roelofs, 2008).

Panic Disorder (PD) and Agoraphobia

For the most part, PD and agoraphobia have been studied along with other anxiety disorders or relative to healthy controls. Individuals with PD and agoraphobia have consistently reported more frequent and severe parental and peer exclusion compared to controls (e.g., Arrindell, Emmelkamp, Monsma, & Brilman, 1983; Spinhoven et al., 2010; Stapinski et al., 2014). It is not clear whether this effect is in any way specific to these disorders. Some studies found that individuals across anxiety disorders, except for SAD, reported comparable frequency and severity of past exclusion (e.g., McCabe et al., 2010).

Generalized Anxiety Disorder (GAD)

Retrospective self-report studies found that GAD was associated with severe (e.g., victimization), but not mild (e.g., non-inclusion), forms of exclusion (e.g., Scharfstein, Alfano, Beidel, & Wong, 2011; Stapinski et al., 2014). In a similar vein, individuals with GAD tend to report more severe parental abuse than healthy controls, and longitudinal studies have consistently shown that milder forms of parental exclusion, for example, lack of warmth, does not predict GAD (e.g., Hale, Engels, & Meeus, 2006). Similar to PD and agoraphobia, the link between exclusion and GAD symptoms may reflect a more general effect of exclusion across anxiety and depression (e.g., Spinhoven et al., 2010).

Obsessive-Compulsive Disorder (OCD)

Most studies found that exclusion by peers, but not parents, was associated with OCD symptoms (e.g., Wilcox et al., 2008). Children with OCD tend to report experiencing higher rates of concurrent peer victimization (Storch et al., 2006). However, research has yet to determine whether peer victimization causes OCD symptoms, whether OCD symptoms—especially obsessions related to fears of harming others and tics—elicit victimization, or whether the relation may be due to the effect of exclusion on anxiety symptoms in general (e.g., Simonds & Thorpe, 2003).

Rachman (2010) proposed that exclusion that elicits disgust (e.g., betrayal) may contribute to contamination-related OCD symptoms. Victims of disgust-eliciting exclusion may feel humiliation and disgust towards themselves such that they feel compelled to alleviate these feelings by cleaning (Rachman, Radomsky, Elliott, & Zysk, 2012). One study found that, after experiencing interpersonal trauma, feelings of self-disgust were associated with OCD contamination symptoms, whereas feelings of disgust towards others were associated with PTSD symptoms (Badour, Bown, Adams, Bunaciu, & Feldner, 2012). Research is needed to evaluate this intriguing hypothesis.

Posttraumatic Stress Disorder (PTSD)

Individuals who have been exposed to threatened death, serious injury, or sexual violence tend to experience elevated posttraumatic stress symptoms (e.g., intrusive flashbacks of the traumatic event), but in most cases, symptoms dissipate over time. Those whose symptoms remain elevated, distressing, and dysfunctional for an extended period of time meet criteria for PTSD. When disclosing their trauma experiences for the first time, victims of trauma are met with a wide range of responses from others. Some are met with acceptance and validation, while others are met with a range of exclusion-like responses including disbelief, changing the subject, and

victim-blaming. The latter, more negative responses have been shown to predict greater posttraumatic symptom severity (Belsher, Ruzek, Bongar, & Cordova, 2012).

Research suggests that social acceptance and exclusion are important factors that influence the severity and chronicity of symptoms (see Charuvastra & Cloitre, 2008, for a review). In particular, it was initially proposed that acceptance might buffer the effects of trauma, leading to symptom reduction (Charuvastra & Cloitre, 2008). In support of this notion, longitudinal studies have shown that greater perceived support from close others and the community predict fewer subsequent symptoms and less severe course overall in both civilian and military populations (e.g., Kaniasty & Norris, 2008; Kelley, Britt, Adler, & Bliese, 2014; Koenen, Stellman, Stellman, & Sommer, 2003; Mueller, Moergeli, & Maercker, 2008). In a similar vein, meta-analyses have suggested that lack of social support is one of the strongest predictors of symptoms (e.g., Brewin, Andrews, & Valentine, 2000).

That said, lack of social support does not equate to social exclusion, and more recent findings suggest that instances of severe exclusion may have a bigger impact on symptoms than social acceptance or lack thereof (Charuvastra & Cloitre, 2008). In a longitudinal study, the frequency of peer victimization and bullying predicted subsequent PTSD symptom severity in a sample of youth affected by Hurricane Katrina (Terranova, Boxer, & Morris, 2009). Furthermore, an experimental study found that healthy participants who were excluded by peers in a virtual ball-tossing game exhibited symptoms characteristic of PTSD, including fear and dissociative responses (Mooren & van Minnen, 2014).

Symptoms of PTSD may place affected individuals at greater risk for social exclusion such that exclusion becomes a maintaining factor for the disorder. Although social support initially predicted symptom severity, a cross-lagged longitudinal study showed that this relationship later reversed such that greater severity predicted less support after an extended period of time post-trauma (Kaniasty & Norris, 2008). Importantly, trauma victims are not always outright excluded, but tend to isolate themselves as a result of their lack of interest in social interaction and maladaptive coping strategies (e.g., social withdrawal). Such factors, in conjunction with trauma disclosure, verbal aggression, and other features of PTSD, may produce feelings of discomfort in others that ultimately lead to the exclusion of the traumatized individual (e.g., Hassija & Gray, 2012).

Depression

Depression is characterized by core symptoms of a persistent sadness or loss of interest or pleasure in activities, along with other heterogeneous symptoms such as significant changes in appetite, sleep, and energy (APA, 2013). Along with anxiety disorders, depression is one of the most studied consequences of exclusion. Studies in social psychology have consistently found that exclusion leads to immediate depressive-like symptoms such as low mood (e.g., Williams, Cheung, & Choi, 2000). Meanwhile, research in clinical psychology strongly suggests that exclusion is one factor that

contributes to the development of clinical depression. Findings on depression as a consequence of exclusion closely parallel those on anxiety. The overwhelming consensus from longitudinal studies and retrospective self-reports is that mild and severe parental and peer exclusion during development predicts a diagnosis of major depression in adulthood (e.g., Modin et al., 2011; Platt, Kadosh, & Lau, 2013; Spinhoven et al., 2010). In addition, findings suggest that exclusion may accelerate the development of clinical depression when combined with other negative events. Specifically, the risk of a diagnosis of depression increases when interpersonal loss or stressful life events are combined with a lack of social support (Targosz et al., 2003).

Importantly, evidence suggests that social exclusion does not facilitate the development of clinical depression simply by virtue of being a negative interpersonal event, and that the development of clinical depression is an effect of exclusion above and beyond other consequences such as anxiety. Social exclusion has been shown to increase the risk of a diagnosis of depression and to hasten the onset of major depressive episodes considerably more than loss of social connections due to other causes (see Slavich, O'Donovan, Epel, & Kemeny, 2010, for a review). For example, excluded individuals are twice as likely to develop clinical depression as those who initiated romantic breakups or experienced the death of close others (Slavich et al., 2010). Some propose that the heightened risk of developing clinical depression from exclusion as compared to interpersonal loss may stem from the additional component of social-evaluative threat, which can lead to negative self-appraisals (Slavich et al., 2010). In addition, although depression and anxiety have been shown to be unique and partially independent consequences of exclusion, the exclusion–depression link tends to be stronger when both are present (e.g., Hovens et al., 2012).

Just as social exclusion can facilitate the development of clinical depression, there is evidence that subclinical and clinical depression can elicit further social exclusion, thus creating a feedback loop that maintains the condition. One mechanism through which depression may elicit exclusion is through excessive reassurance-seeking. As a result of reassurance-seeking, depressed individuals tend to be evaluated more negatively (e.g., as sadder, weaker) and are more likely to elicit exclusion than are healthy individuals (see Starr & Davila, 2008, for a meta-analysis). Depression exacerbated by excessive reassurance-seeking then causes further interpersonal exclusion, and thus consolidates the negative interpersonal cycle (Joiner, 1999). In addition to excessive reassurance-seeking, there is evidence that seeking negative self-verifying feedback in close relationships leads to peer exclusion (Joiner, Katz, & Lew, 1997). The receipt of negative feedback by depressed individuals elicits further negative feedback-seeking, leading to greater peer exclusion (Casbon, Burns, Bradbury, & Joiner, 2005).

Somatic Symptom Disorders

Individuals suffering from somatic symptom disorders experience symptoms and illness, such as pain and nausea, without sufficient medical explanations. The defining feature of somatic symptom disorders is excessive preoccupation with physical symptoms and illness (APA, 2013). Meta-analyses suggest that severe parental and

peer exclusion are associated with subsequent development of somatic symptoms (Davis, Luecken, & Zautra, 2005; Gini & Pozzoli, 2013); however, there are caveats to this finding. First, studies have only measured participant experience of somatic symptoms, which is problematic given that such symptoms can have medical bases and concerns about them may therefore be in the normal range. In fact, this confound is not specific to exclusion-related research, but reflects inherent difficulties in conducting research on the somatic symptom disorders in general (e.g., Frances, 2013). Second, the specificity of the somatic symptom disorders as a consequence of exclusion is relatively unknown. In one study, the effect of peer victimization on somatic symptoms was accounted for by depression (e.g., Uusitalo-Malmivaara, 2012). Third, although evidence suggests that exclusion may elicit the experience of somatic symptoms, it remains unknown whether it promotes excessive concern about such symptoms—the crux of somatic symptom disorder.

Eating Disorders

Eating disorders are characterized by persistent disturbances in eating-related beliefs, attitudes, and behaviors (APA, 2013). With respect to social exclusion, much of the relevant research has been conducted on anorexia nervosa and bulimia nervosa, disorders characterized by negative body image and a persistent desire to be thin. Individuals with such disorders may go to extreme measures to achieve thinness, including food restriction and purging. Research has also examined the effects of exclusion on binge eating disorder, characterized by recurrent episodes of excessive food intake with no compensatory behaviors. Retrospective self-reports of childhood abuse and neglect are associated with eating pathology, with emotional abuse more strongly predictive of symptoms and dysfunctional impulsivity than both sexual and physical abuse (e.g., Burns, Fischer, Jackson, & Harding, 2012; Myers et al., 2006). A meta-analysis revealed that appearance-related teasing can play a key role in the development of negative body image, dietary restraint, and bulimic behaviors (Menzel et al., 2010).

Research suggests that binge eating is a maladaptive coping strategy adopted by certain individuals in response to negative affect resulting from exclusion. In a longitudinal study of children ages 8–13, initial frequency of weight-related teasing predicted the subsequent likelihood of *loss of control* eating, an important developmental precursor of binge eating disorder over a 2-year period (Hilbert, Hartmann, Czaja, & Schoebi, 2013). Other studies have also pointed towards an interpersonal model of binge eating (see Ansell, Grilo, & White, 2012). Results from momentary assessments, for instance, suggest that negative affect from interpersonal stressors may mediate the link between interpersonal exclusion and binge/purge behaviors in individuals with bulimia nervosa (e.g., Ansell et al., 2012; Smyth et al., 2009). One caveat is that there were considerable between-individual differences in terms of the negative affect-binge/purge relation (Ansell et al., 2012). Even after merely reading vignettes portraying weight-related teasing, women with histories of binge eating

ate significantly more cookies in an ostensible taste test compared to women with no binge-eating histories, even though the two groups experienced similar levels of negative affect (Aubie & Jarry, 2009). These findings suggest that binge eating is not a general response to high levels of negative affect resulting from exclusion, but rather a maladaptive emotion regulation strategy adopted by certain individuals.

Severe Psychopathology

Bipolar Disorders

Bipolar disorders are defined by alternating periods of mania or hypomania and depression (APA, 2013). A manic episode is a distinct period of abnormally elevated, expansive, or irritable mood, and a hypomanic episode is a lesser version that lasts for a shorter duration.

There is mixed evidence regarding the effect of social exclusion on the onset of bipolar episodes. Childhood maltreatment and trauma may be associated with earlier symptom onset (see Daruy-Filho, Brietzke, Lafer, & Grassi-Oliveira, 2011, for a review). One study found that patients with bipolar disorders reported more severe peer bullying compared to those with unipolar depression (Parker, Fletcher, McCraw, Futeran, & Hong, 2013). By contrast, another study found that parents reported that their adolescent children with bipolar disorders had average or above average functioning in peer relationships prior to disorder onset (Kutcher, Robertson, & Bird, 1998). It is worth noting that research on the topic has exclusively relied on retrospective reports. It is possible that recalled exclusions before onset of symptoms may be contaminated by exclusion experiences after symptom onset. In addition to recall bias, findings may be susceptible to third variables that predispose individuals to both exclusion and bipolar symptoms. Given the lack of well-controlled research, the effect of exclusion on the onset of bipolar symptoms remains uncertain (Daruy-Filho et al., 2011).

After onset, some evidence suggests that social exclusion predicts a worse course of symptom progression. For instance, recalled childhood abuse is associated with more severe course (Daruy-Filho et al., 2011). Longitudinal studies demonstrated that perceived criticism and distress at criticism predict relapse (Miklowitz, Wisniewski, Miyahara, Otto, & Sachs, 2005; Scott, Colom, Pope, Reinares, & Vieta, 2012).

Most of the relevant literature has documented the disruptive effect of symptoms on peer relations. Research suggests that greater symptom severity predicts lower social support, less acceptance by family and peers, and greater victimization (Beyer et al., 2003; Keenan-Miller & Miklowitz, 2011; Siegel, Freeman, La Greca, & Youngstrom, 2015). One study found peer difficulties occurred only after the onset of the disorder, suggesting that exclusion by others may be a response to bipolar symptomatology (Kutcher et al., 1998). Finally, bipolar symptoms may elicit exclusion from society in general.

Findings show that individuals with bipolar disorders experience high levels of stigma, comparable to that experienced by individuals with schizophrenia (Hawke, Parikh, & Michalak, 2013).

Schizophrenia

Schizophrenia is a psychotic disorder characterized by a wide range of abnormalities, usually involving delusions, hallucinations, withdrawal, and avolition (APA, 2013). There has been a recent surge of interest in the role of social exclusion in predicting the onset of schizophrenia, and evidence strongly supports that hypothesis. Longitudinal studies suggest that severe and especially chronic parental and peer exclusion considerably increase the risk of subsequent diagnosis (e.g., Bentall, Wickham, Shevlin, & Varese, 2012; Bonoldi et al., 2013; Schreier et al., 2009; Varese et al., 2012). Several mechanisms underlying the relation have been proposed. For instance, the relationship between exclusion and psychotic symptoms may be mediated by increased anxiety and depression, as well as through stress and immune system responses (e.g., Fisher et al., 2013; van Winkel, van Nierop, Myin-Germeys, & van Os, 2013). Experimental findings suggest that peer exclusion manipulations may induce paranoid delusion-like beliefs in nonclinical samples and state paranoia in high paranoia prone samples (Kesting, Bredenpohl, Klenke, Westermann, & Lincoln, 2013; Westermann, Kesting, & Lincoln, 2012). There are mixed findings as to whether exclusion promotes the development of psychotic symptoms in all individuals or only in those who are genetically vulnerable (e.g., van Os, Linscott, Myin-Germeys, Delespaul, & Krabbendam, 2009; van Winkel et al., 2013). Interestingly, individuals with traits associated with Cluster A personality disorders (i.e., paranoid, schizoid, schizotypal), which are characterized by avoidance of social relationships and being content with social isolation, are less susceptible to social pain elicited by exclusion (Wirth, Lynam, & Williams, 2010).

Exclusion likely influences the course of the disorder. After onset, a dose-dependent relation was observed such that exclusion severity predicted symptom severity, and symptoms declined considerably following reduction in exclusion (Kelleher et al., 2012). In addition, exposure to family members' expressions of negative emotions is predictive of relapse (e.g., Butzlaff & Hooley, 1998).

Evidence suggests that individuals with schizophrenia tend to have poor social functioning, which can exist prior to symptom onset (see Hooley, 2010, for a review). However, it is likely that schizophrenic symptomatology contributes to further exclusion, as reduced social integration is associated with the onset, duration, and severity of symptoms (Killaspy et al., 2014). Symptoms of withdrawal and avolition are likely contributors to the relation (Giacco et al., 2012). In addition, approximately half of individuals with schizophrenia have experienced stigma (Gerlinger, Hauser, Lacluyse, Wampers, & Correll, 2013), and such individuals are at higher risk for both violent and nonviolent victimization (Fitzgerald et al., 2005).

Personality Disorders

Borderline Personality Disorder (BPD)

A personality disorder is a persistent pattern of experience and behavior that is significantly different from what is expected in the individual's culture and that causes distress or impairment (APA, 2013). BPD is characterized by a pattern of instability in interpersonal relationships, self-image, and affect, as well as significant impulsivity (APA, 2013). A defining feature of BPD is hypersensitivity to interpersonal exclusion and this has fostered research on these individuals' experiences of and reactions to social exclusion.

Both longitudinal and retrospective self-report studies demonstrate that BPD patients report higher levels of both mild and severe parental exclusion (e.g., Laporte & Guttman, 2007; Machizawa-Summers, 2007; Widom, Czaja, & Paris, 2009). A few studies examining the effect of peer exclusion found that it tends to increase symptoms over several years (e.g., Wolke, Schreier, Zanarini, & Winsper, 2012). In fact, exclusion predicts BPD symptoms above and beyond depression and other personality disorders (e.g., Dalbudak & Evren, 2015; Zanarini, Frankenburg, Reich, Hennen, & Silk, 2005). Various forms of exclusion have been proposed to increase symptoms, for example, criticism and betrayal (e.g., Kaehler & Freyd, 2012; Whalen, Malkin, Freeman, Young, & Gratz, 2015). Some evidence suggests that exclusion may only increase the risk of a BPD diagnosis in genetically vulnerable individuals. Interestingly, most sisters of women diagnosed with BPD do not meet criteria themselves despite reporting growing up in similar environments (Laporte, Paris, Guttman, & Russell, 2011).

BPD symptoms also elicit social exclusion, and the resulting negative interpersonal cycle maintains the disorder. Longitudinal studies have shown that, during adolescence, parental punishment and lack of warmth have a reciprocal relation with symptoms. In addition, evidence suggests that symptoms predict high levels of physical and psychological aggression in others (Stepp, Smith, Morse, Hallquist, & Pilkonis, 2012). Individuals with BPD tend to be interpersonally sensitive such that they may perceive exclusion even when they are included or over-included (e.g., De Panfilis, Riva, Preti, Cabrino, & Marchesi, 2015; Gutz, Renneberg, Roepke, & Niedeggen, 2015). The perception of exclusion likely elicits rage and aggression in such individuals, which tend to be met with aggression from others in turn, resulting in further exclusion experiences (Berenson, Downey, Rafaeli, Coifman, & Paquin, 2011; Stepp et al., 2012). For example, impulsive behaviors in individuals with BPD can be triggered by their tendency to have extremely polarized negative reactions to social exclusion (Coifman, Berenson, Rafaeli, & Downey, 2012). Interestingly, in individuals with BPD, need for social approval and lack of sociability predicted experiencing aggression 2 years later, indicating that this negative interpersonal cycle may be due in part to ineffective strategies for connecting with others (Stepp et al., 2012).

Other Personality Disorders

Although most research concerning social exclusion has been conducted with borderline personality disorder, several forms of early exclusion have been investigated as risk factors for personality disorders in general. Retrospective reports suggest that severe parental exclusion is associated with personality disorders (e.g., Waxman, Fenton, Skodol, Grant, & Hasin, 2014). Individuals with personality disorders report more severe bullying from peers and even teachers (Hengartner, Ajdacic-Gross, Rodgers, Müller, & Rössler, 2013; Monsvold, Bendixen, Hagen, & Helvik, 2011). By contrast, positive childhood experiences predict resilience and sometimes even remission from personality disorders (Skodol, 2012). Again, emerging evidence also suggests that symptoms may elicit exclusion. For example, a cross-lagged longitudinal study of twins found that parent behavior and psychopathic personality in children had a reciprocal relation over a 5-year period (Tuvblad, Bezdjian, Raine, & Baker, 2013).

Discussion

Research in social and developmental psychology suggests that social exclusion causes a host of consequences that are detrimental to well-being. Empirical research in clinical psychology generally reveals the same pattern; specifically, that social exclusion promotes the development and maintenance of symptoms across disorders. We began by reviewing research on anxiety and depression and summarized strong evidence to suggest that both mild and severe forms of exclusion by parents and peers contribute to the development of these conditions. The effect of exclusion tends to be dose-dependent such that the frequency and type of past exclusion predicts the severity of symptoms and the number of anxiety and depression diagnoses. Examining research for specific anxiety and mood disorders leads us to conclude that the development of social anxiety disorder, posttraumatic stress disorder, and clinical depression may be especially sensitive to exclusion. Specifically, the chances of developing the disorders are increased by even mild forms of exclusion such as low peer liking and lack of social support. On the other hand, the development of panic disorder and generalized anxiety disorder seems to be less dependent on exclusion such that only severe forms, for example, parental abuse and peer victimization, elicit symptoms. Although exclusion tends to occur in individuals with obsessive-compulsive disorder, there is currently no evidence to suggest that exclusion contributes to its development.

The effect of exclusion on somatic symptom disorders remains relatively unknown given inherent problems with the definition of the disorder. There is strong empirical evidence to suggest that symptoms of eating disorders, such as anorexia nervosa and bulimia nervosa, may develop from parental and peer exclusion, especially when exclusion is related to physical appearance. Even in individuals without diagnosable eating disorders, binge eating may represent an attempt to regulate

negative emotions as well as a potential precursor for diagnosis. In the context of severe mental disorders, the role of exclusion in the onset of bipolar disorder remains unknown, although research suggests that it does exacerbate symptoms after onset. By contrast, strong evidence suggests that exclusion is associated with onset, symptom severity, and overall course in schizophrenia. Finally, parental exclusion may contribute to the development of borderline personality disorder, which again highlights the fact that exclusion can have long-term effects of disrupted emotional and interpersonal functioning. However, findings suggest that the relation may be more nuanced. Specifically, the effect of exclusion on borderline personality disorder may depend on its interaction with other factors such as genetics. There is also some evidence that exclusion and other personality disorder symptoms have a reciprocal relation, but more research is needed to determine its exact nature.

For social anxiety disorder, posttraumatic stress disorder, depression, severe mental disorders, and borderline personality disorder, there is also evidence suggesting that symptoms elicit exclusion, which in turn promotes symptoms, thereby forming a negative interpersonal cycle that perpetuates the disorder in question. Various mechanisms may underlie the effect of symptoms on exclusion. Safety behaviors and signs of nervousness in individuals with social anxiety disorder can elicit discomfort in others. For posttraumatic stress disorder, trauma disclosure and social withdrawal result in discomfort in and distancing by others. Depressed individuals may excessively seek reassurance and negative feedback, which in turn elicits dislike from others. Symptoms of severe mental disorders are interpersonally disruptive and are associated with heavy stigma. Individuals with borderline personality disorder have difficulty regulating emotions and may engage in strategies that are damaging to interpersonal relationships. Therefore, exclusion does not only facilitate the development of disorders but may also be an ongoing factor that contributes to their maintenance.

There are also caveats to our conclusions, mostly pertaining to study design. Notably, there has been a lack of studies using rigorous designs to address the effect of exclusion on psychopathology, and hence, our conclusions remain suggestive. Although we focused on research using experimental and longitudinal designs and retrospective self-reports in this chapter, a considerable number of studies examined cross-sectional relations between exclusion and symptoms that were not included here. Of the research we reviewed, some longitudinal studies did not control for exclusion and symptoms at other time points; hence, the relations inferred may generate biased estimates of the relations reported (Cole & Maxwell, 2003). Finally, even though retrospective self-reports generally have reasonable reliability and validity, such designs may still be susceptible to biased recall, especially when question items are open to interpretation (Hardt & Rutter, 2004). Future studies using longitudinal cross-lagged designs and growth curve analysis, as well as retrospective self-report with more structured questions, could yield more conclusive inferences.

Despite these limitations, evidence generally suggests that exclusion facilitates the development and maintenance of a wide range of adult disorders. Most studies we reviewed have not considered the effect of exclusion across the range of psychopathology, but have instead focused on exclusion in the context of different disorders.

Unfortunately, this method of operation has prevented researchers from integrating and categorizing the full range of disruptive consequences of exclusion, which may transcend traditional diagnostic labels. Such transdiagnostic effects may then manifest as symptoms of various disorders. An advantage of a more precise understanding of the dynamics underlying exclusion is that preventative policies and intervention strategies could be made more flexible and efficient. In the remaining portion of the chapter, we propose transdiagnostic effects of exclusion that deserve future research attention and that may explain both the general and specific effects of exclusion on various disorders.

Transdiagnostic Consequences of Exclusion

Recent research suggests that hormonal changes associated with exclusion may manifest as clinical symptoms. One important change resulting from exclusion is activity in the hypothalamic–pituitary–adrenal (HPA) axis, a neuroendocrine system that controls organism reactions to stress and is associated with changes in mood and emotions. Findings suggest that painful feelings from social exclusion, such as childhood abuse, may cause chronic dysregulation in the HPA axis that in turn produces physical and mood symptoms characteristic of anxiety, depressive, somatic, and borderline personality disorders and sensitizes victims to future exclusion (e.g., Eisenberger & Cole, 2012; Heim, Newport, Bonsall, Miller, & Nemeroff, 2001). In particular, dysregulation in the HPA axis has consistently been shown to be more closely associated with exclusion than with diagnostic symptoms (e.g., Fernando et al., 2012). Individual differences in other biochemicals such as oxytocin and progesterone have also been proposed as possible mediators of the exclusion-psychopathology relationship (e.g., Alvares, Hickie, & Guastella, 2010; Maner, Miller, Schmidt, & Eckel, 2010).

In addition to hormonal responses, exclusion may also cause changes to cognitive and affective tendencies, which thereby increase victims' general vulnerability to psychopathology. One effect of exclusion that has received research attention is impaired ability to engage in adaptive forms of emotion regulation. As part of a series of classic studies, Baumeister and colleagues found that exclusion caused victims to consume unhealthier foods (Baumeister, DeWall, Ciarocco, & Twenge, 2005). As mentioned previously, research in clinical psychology has converged on this finding, suggesting that binge eating may have developed as an emotion regulation strategy in response to exclusion (e.g., Steiger, Gauvin, Jabalpurwala, Séguin, & Stotland, 1999). Other research suggests that exclusion may elicit maladaptive emotion regulation strategies in addition to binge eating and that these strategies may increase risk for developing anxiety, depressive, and personality disorders (e.g., Fernando et al., 2014).

So far, we have proposed transdiagnostic factors that may explain the general effect of exclusion across disorders. In addition, current research suggests that there may be factors that explain how exclusion promotes certain symptoms more than others. For example, cognitive-behavioral theorists contend that the development of specific disorders may depend on changes in beliefs following adverse social events.

In other words, the disorder that develops may depend on what victims learn about themselves, others, and social situations from the exclusion experience. Research suggests that there is considerable variation in the lessons that victims take away from exclusion (Leary, Springer, Negel, Ansell, & Evans, 1998). For example, some may perceive themselves as being less socially desirable, whereas others may perceive themselves as less physically attractive. After repeated exclusion in similar circumstances, or when exclusion is severe, such changes may become ingrained beliefs that are characteristic of specific disorders. For example, research suggests that children who fail to gain social approval and attribute failure to personal social incompetence may develop learned social helplessness, which is characteristic of social anxiety disorder, whereas children who are teased about their weight may learn that they need to be thin to be accepted and develop eating disorders (Goetz & Dweck, 1980; Menzel et al., 2010). In addition to beliefs, other research suggests that emotions experienced in response to exclusion may be indicators of subsequent psychopathology. For example, hurt feelings may lead to social anxiety and disgust may lead to obsessive-compulsive disorder (Badour et al., 2012; Fung & Alden, 2016).

Conclusion

Research in clinical psychology suggests that the effects of exclusion are widespread and may facilitate the development and maintenance of most adult mental disorders. For certain disorders, such as social anxiety disorder, depression, and borderline personality disorder, symptoms may in turn elicit exclusion, forming an interpersonal cycle that perpetuates the psychopathology. However, there are limitations in this area of research that need to be addressed. First, the hypothesis that exclusion causes symptoms requires more rigorous tests, for instance, studies with longitudinal and experimental designs that include adequate controls and standardized measures of exclusion. Second, consequences of exclusion have been examined independently in separate diagnostic categories, despite research suggesting that the effects of exclusion may be better conceptualized as transdiagnostic factors. Accordingly, we proposed several transdiagnostic factors that may explain both the shared and the specific effects of exclusion in the context of traditional diagnostic labels. In sum, there is currently moderate support for the hypothesis that exclusion facilitates the development of various forms of psychopathology. To fully understand the effects of exclusion, future research may benefit from a more integrative framework that aims to capture these effects across disorders.

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Research in Social Gerontology: Social Exclusion of Aging Adults

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Social exclusion has been investigated from different perspectives. The term emerged in Europe in the 1970s in social policy to describe the social and economic processes that produce poverty and relative deprivation of some social groups. The term has been used to describe processes that produce exclusion, such as material, social, and geographic disadvantage; the structural causes of exclusion, such as state and private business policies; and the negative psychological effects of social exclusion (Dewilde, 2003; Peace, 2001). The concept of social exclusion may also apply to understanding risks to the health and well-being of older adults. Some factors hypothesized to increase vulnerability to social exclusion among older persons include aging-related characteristics such as deteriorating health, retirement, decreases in income, separation from former social networks, discrimination and prejudice against older people (ageism), and lack of community resources that promote interaction with others (Kneale, 2012). Older adults with a lifetime of material disadvantage are particularly at risk for social exclusion.

In a recent issue of *The Gerontologist* on "successful aging," the term social exclusion appeared in an article criticizing the American concept of successful aging (Rowe & Kahn, 1987, 1997). According to some commentators, the Rowe and Kahn concept of successful aging emphasizes the contributions that individual agency and lifestyle make toward "aging well" rather than social factors and policies that may produce social and health inequalities among older adults (Katz & Calasanti, 2015). The major implication was that emphasizing individual lifestyle factors as a way to age successfully produced feelings of social exclusion among

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low income and minority elders whose health and opportunities for social inclusion were largely out of their control. Indeed, this lack of attention to social inequality across the life course is a major theme of criticism directed at the concept of successful aging (Pruchno, 2015; Rowe & Kahn, 2015).

In contrast to this debate, it is certainly the case that American gerontologists have focused for many years on the factors that may produce social exclusion and its consequences on health and well-being. For example, the threat of social isolation (i.e., being apart from others physically), resulting from decreased social connections among aging adults, was one of the key questions pursued by mid-century US gerontologists (Cumming & Henry, 1961; Rosow, 1967). Early research on older adults assumed that social isolation is a consequence of normal aging (Cumming & Henry, 1961) due to the types of events that occur to older adults. Social and physical events associated with aging, such as retirement, widowhood, and declining health, are losses of social roles and functions. Over the ensuing years, researchers have strongly disputed the idea that increased disengagement is normative among aging adults (Pillemer & Glasgow, 2000). Instead, researchers have focused on studying the process of maintaining social engagement and connections across life: social integration (the state of being connected to others) became established as a fundamental determinant of health, not only among older adults (Rowe & Kahn, 1997) but across the life course (Berkman, Glass, Brissette, & Seeman, 2000; Charles & Carstensen, 2009; Cohen, 2004; Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015; House, Landis, & Umberson, 1988).

Pillemer and Glasgow (2000) concluded from a detailed review that the majority of US older adults are not threatened by social isolation when they strive to maintain social integration. Nevertheless, Pillemer and Glasgow noted that some subgroups of the older population are more at risk of social isolation than others. Such subgroups include those with fewer social and economic resources as well as the geographically isolated. Research on social exclusion focuses on the same subgroups (Kneale, 2012). Pillemer and Glasgow also identified personal life course factors, such as singlehood, widowhood, declining health, onset of disability, caring for a disabled or ill relative, and having few children or lacking contact with children, as creating a risk for social isolation in older adulthood. Wethington, Moen, Glasgow, and Pillemer (2000) argued for applying the life course perspective from sociology (Elder, Johnson, & Crosnoe, 2003) and using longitudinal research designs to identify adults at risk for social isolation in old age (see also Dewilde, 2003), as well as developing more theory-based experimental interventions to help prevent or mitigate social isolation among older adults who are most at risk.

During the twenty-first century, research on social integration and social isolation, as well as related concepts such as social engagement, social support, solitude, and loneliness, has continued to proliferate in the field of gerontology, some of it based on the life course perspective (Berkman, Ertel, & Glymour, 2011; Ertel, Glymour, & Berkman, 2009). Socioemotional selectivity theory (Charles & Carstensen, 2009), which proposes that as people age and approach death they perceive a more limited time horizon, has contributed to understanding the factors that predict risk of social isolation among older people or its opposite, continuous social

integration. A number of summative reviews of interventions designed to reduce social isolation among older people have also been published (Cattan, White, Bond, & Learmouth, 2005; Dickens, Richards, Greaves, & Campbell, 2011; Findlay, 2003; Sabir et al., 2009), as well as analyses of the impact of volunteering on maintaining quality of life among older adults by preventing social isolation (e.g., Cattan, Hogg, & Hardill, 2011).

Despite good reasons for concern about the well-being of the increasing number of older adults and the impacts of societal aging, there is a theoretical and empirical consensus that social exclusion in the form of isolation is not an inevitable part of aging as long as social integration is maintained. There are also intervention programs and policies that aim to prevent or mitigate social exclusionary practices that arise from loss of work, age-segregation in social networks, residential segregation, and poverty. A number of programs and policy initiatives have been undertaken to change societal views about aging, such as the Active Ageing initiatives in Europe (Foster & Walker, 2014)—programs to help older adults overcome the social and structural barriers that can limit them from full participation in society.

In this chapter, we review research in the USA and elsewhere that relates to the social exclusion of older people, specifically research on social isolation and integration and ageism, and their relationship to psychological factors such as loneliness (i.e., perceived social isolation) among older people. We also comment on future directions in research, including important gaps exposed in the study of social isolation, social integration, and ageism that may be filled by considering insights from the research on social exclusion.

Research on Social Exclusion of Older Adults

As we noted above, gerontologists do not use the term social exclusion widely, although there are notable exceptions among gerontologists who are social psychologists (e.g., Löckenhoff, Cook, Anderson, & Zayas, 2012) and have applied the seminal work of Baumeister and Leary (1995) on interpersonal attachment to examine the emotional impact of exclusion on older adults. Rather, gerontologists have focused more explicitly on social isolation as one type of social exclusion and the closely related concepts of normative role loss events that threaten social integration (Wethington & Pillemer, 2014) and ageism (Butler, 1969). Research on these concepts has found associations with lower psychological well-being and poorer overall health among older people.

The most copious research is about social isolation and social integration (and social support and networks) among older people; loneliness and depression are the most frequently studied psychological impacts of social isolation from others (Wethington & Pillemer, 2014). However, there is also extensive research, much of it evolving, on societal ageism, defined by Robert Butler (1969) as discriminating against and stereotyping older adults. The latter has been linked to social exclusion of older people from productive activity (Shultz & Wang, 2011) and recently to

negative health and psychological outcomes for older adults, particularly those who have acquired negative views of aging (e.g., Emile, d'Arripe-Longueville, Cheval, Amato, & Chalabaev, 2015; Levy & Meyers, 2004).

Perhaps with the exception of research on ageism, which can be embedded in institutions that discriminate against older workers (Hudson, 2015), research trends more toward examining the individual impacts of exclusionary practices and proposing individual solutions for them, rather than toward societal solutions to problems such as social isolation and the conditions of normal aging.

In the 1960s and 1970s two diverse views of social relations of older people and their preference for engaging in social relationships dominated in the literature: *disengagement* (Cumming & Henry, 1961), or voluntary distancing from social roles and relationships as adults approach old age, and *continuity* of social relations, or continued engagement in meaningful roles despite changes in health and mobility (Rosow, 1967). This debate has been resolved by empirical studies that have tended to support the continuity perspective. Older people remain engaged in relationships and work actively to maintain meaningful and productive activities. Engagement in social activities and productive roles is one of the three components of the Rowe and Kahn (1987, 1997) perspective on successful aging. In their formulation, social isolation is viewed as indicator of unsuccessful aging, rather than as normal aging. Maintaining social relationships, moreover, is generally viewed as a contributor to continued health and well-being, as well as the norm for aging adults.

Evolving research on the family relationships of older adults is a case in point. Despite changes in family structure over the course of the twenty-first century, specifically higher rates of divorce, increase in the prevalence of cohabitation among adults rather than marrying and remarrying, and smaller families that can be more geographically dispersed, parent–child relationships in families remain strong and important (Fingerman, Pillemer, Silverstein, & Suitor, 2012).

For example, the majority of older adults are involved in the lives of their children and grandchildren and research demonstrates that both emotional closeness and instrumental exchange continue in many families throughout the life course (Fingerman et al., 2012). Indeed, sociodemographic changes through the first decade of the twenty-first-century suggest that intergenerational relationships continue to buffer against social exclusion in later life. Increasing longevity means that individuals have the opportunity to enact intergenerational family roles for a much longer period than did previous generations. For example, although the age at which women typically become grandmothers has changed little over time, the number of years that women are likely to live after this transition may now be more than half of their adult lives, sometimes spanning 30 or more years. Further, married individuals are likely to spend twice as many years together after their children enter adulthood and, in many countries, they may find that one or more of their offspring remain or return to the parental home at various points (Suitor, Gilligan, & Pillemer, 2016).

Despite this more optimistic view of the continuity of strong relationships in family, there are reasons to be concerned about the availability of offspring to care for older adults in the future given demographic trends. Members of the baby boom cohort generation have fewer offspring than their parents' cohort and are much more likely to

enter later life unmarried because of their higher divorce rate (Lin & Brown, 2012). In particular, in the USA and many European countries, baby boomers could experience lower levels of availability of family support and care and may be reliant on broader intergenerational systems of care such as tax-supported institutions or broader social systems such as care organized by neighborhoods (Moody, 2008). Further, the children of the baby boomers' children are also much more likely to be single parents; nearly 4 in 10 births in the USA in 2007 were to unmarried women (Ventura, 2009). Thus, combined with ever higher rates of employment for women (who still provide most parent care in the USA and other countries), these circumstances could make support resources relatively scarce (Fingerman et al., 2012). Additionally, if the weak economic conditions in the USA and Europe persist, many children of the baby boomers will be struggling economically and working in unstable jobs (Fingerman et al., 2012).

It should be noted, however, there are countervailing trends that may moderate these trends. Cohabitation without marriage is common in the USA (as in Europe), and the rate of cohabitation has risen among older adults (Brown, Lee, & Bulanda, 2006). Very little research has addressed the types of care that aging cohabiting partners provide to one another, but older adults in long-term stable relationships may provide the same types of care as married couples (Robles & Menkin, 2015). In the USA, both private and public groups have begun to create local enterprises that provide care to older adults living alone in the community through neighborhood organizations in naturally occurring retirement communities (NORCs). Examples are the services to older adults in New York City NORCs, financed by the state of New York, as well as grassroots innovations such as Beacon Hill Village in Boston, a nonprofit association of neighbors to provide other services to their older neighbors, financed by yearly dues (Moody, 2008).

In contrast to social exclusion, social integration encompasses being embedded in social, neighborhood, and community groups as well as having closer relationships from which one derives functional social support (e.g., emotional, affiliative, instrumental, and tangible support). To consider social integration from the point of view of the older person, "aging in place" in a neighborhood, even if living alone, is a way to maintain social integration, assure access to immediate social support from friends and neighbors, and prevent social isolation (Wiles, Leibing, Guberman, Reeve, & Allen, 2012). Older adults are not wrong about this: empirical studies of the networks of older people suggest that a more diverse set of network ties including friends, neighbors, and other community members is associated with greater satisfaction and quality of life (Fiori, Antonucci, & Cortina, 2006; Thoits, 2011; Vaillant, Meyer, Mukamal, & Soldz, 1998).

Research on Social Isolation

Progress in both theory and research has differentiated the concept of social isolation into multiple components. Researchers have distinguished the concept of objective social isolation (or lack of social connectedness and engagement) from

perceived social isolation or the state of loneliness (the sense of feeling disconnected; Cacioppo & Hawkley, 2009; Cornwell & Waite, 2009). The impacts of social isolation and loneliness on physical health have also been studied (e.g., Luo, Hawkley, Waite, & Cacioppo, 2012). Thus in the second decade of the twenty-first century, researchers can predict with somewhat more confidence what the negative impacts of social isolation and loneliness may be and which older people are more likely to suffer those impacts.

Carstensen's theory of socioemotional selectivity (Carstensen, 1992; Carstensen, Fung, & Charles, 2003) is also relevant to understanding social isolation and its effects. Carstensen et al. (2003) propose that as people age and approach death, they become increasingly influenced by awareness of the limited time available. This awareness leads them to maximize social and emotional gains and minimize risks. As a result, they become more selective in the relationships in which they are willing to invest, preferring those social ties that are the most rewarding and deemphasizing relationships that are conflictual, disruptive, or unreliable (Carstensen, 1992; Carstensen et al., 2003). For this reason, a simple decrease in social relationships very near the end of life may not be negative, but instead an indicator of selective investment in more rewarding relationships.

There is a substantial literature on the factors that predict becoming socially isolated in the later years of life. As summarized in previous reviews (Ong, Uchino, & Wethington, 2016; Pillemer & Glasgow, 2000; Wethington & Pillemer, 2014), the major risk factors for isolation are related to living arrangements, lower socioeconomic status (a key factor in the theory of social exclusion), race and ethnicity, gender, and life events, both planned and unexpected, that reduce social role participation and daily interaction with others outside the household. Stable personality factors, such as neuroticism, are also related to social activity. We examine each of these factors here.

Living arrangement factors include living alone, having fewer children, physical distance from close family and friends, and living in a rural or suburban location. Socioeconomic factors that are associated with a risk of social isolation include lower educational attainment, having lower income before and after retirement, and living in a neighborhood or community with fewer supportive resources.

Both expected and unexpected life events and transitions can also produce a risk for social isolation. Expected (or at least anticipated) events include retiring from one's job at the planned time, moving to another community upon retirement, and children transitioning to independent lives and their own families. Older adults can anticipate these events and make plans to compensate for changes in social interaction, primarily by substituting another type of activity such as voluntary work in the community or in institutions such as churches. Research on planned life transitions, such as retirement, suggests that older adults for the most part navigate these successfully and compensate for the loss of work activity, at least in the short term (Shultz & Wang, 2011).

Unexpected events pose more of a threat to well-being. These events include those what most people would experience as stressful, such as widowhood, later life divorce or separation, loss of contact with children because of divorce or other family events

or erosion of those relationships because of family conflict, and developing a disability or chronic health problems that impede social interaction (Evans, Wethington, Coleman, Worms, & Frongillo, 2008).

Personality traits are also related to loneliness (perceived social isolation) across life, although a great deal of this research has been conducted among younger people rather than older people. Social relationships have a role in personality development (Mund & Neyer, 2014) and personal traits such as shyness, social anxiety, introversion/extraversion, and pessimism/optimism are related to a greater level of loneliness (Hawkley, 2015). For example, Mund and Neyer (2015), using a two-wave sample of German younger adults interviewed over 15 years, found that trait neuroticism was associated with later levels of loneliness, controlling for extraversion, agreeableness, and conscientiousness. It is possible, as Mund and Neyer noted, that personality traits influence the willingness to engage in social activity and the perception of whether social relationships are enjoyable. However, the relationship between loneliness and personality is likely to be reciprocal; Mund and Neyer also found that loneliness at the first time point of data collection was associated with changes in neuroticism, extraversion, and conscientiousness. They suggested as well, based on this study, that chronic loneliness could reduce motivation to maintain social networks and relationships.

On the positive side, many adults maintain social integration even if past roles that gave meaning to life are no longer in place, such as work. Those who have larger social networks and maintain contact with previous work mates fare better. The majority of older Americans maintain strong relationships with their children and grandchildren and, in an age of increasing life span for those over the age of 65, continue to care for aging parents or older siblings as long as they are alive. The benefits of volunteering are well-documented (Cattan et al., 2011; Fried et al., 2004; Li & Ferraro, 2005; Lum & Lightfoot, 2005). Maintaining an active social life, refocusing on family activities and relationships, finding new romantic partners, and engaging in generative activities such as volunteering are believed to help compensate for the sudden or gradual loss of social roles that have been outlets for productive activity that gave meaning to life.

Social integration can also be measured as characteristics of social networks. One trend among older adults, which may pose a risk of social exclusion, is the size of their networks and the ages of those with whom they interact on a regular basis. Uhlenberg and de Jong Gierveld (2004) analyzed the ages of network members for a sample of older adults (age 55–89 years) in the Netherlands. Their findings showed that older adults had relatively fewer younger people in their networks than the population in general, and that the "deficit" of younger people was larger over successively older age groups. The youngest people were the least likely to be in the networks of older adults. Moreover, most contact with younger adults was with children and grandchildren (90 % were relatives). These are "on average" effects, and the authors investigated what factors were associated with greater contact with younger people. The factors associated with greater contact were remaining in the work force, volunteering in the community, and living in a more age-integrated neighborhood with many younger people. These and related European findings

(Kalmijn & Vermunt, 2005) and other data from the USA (Smith, McPherson, & Smith-Lovin, 2014) suggest that there are age barriers to overcome for maintaining social interaction with others.

Research on Ageism

Ageism, defined as stereotyping and discrimination against individuals or groups based on their age, is considered a major cause of social exclusion (Butler, 1969). Butler based his definition of ageism on measures of sexism and racism extant in the 1960s. Studies of ageism have focused on stereotyping of older adults, the social stigma of aging, the impact of internalized stereotypes and stigma ("stereotype threat") on self-efficacy, exposure to discrimination, and structural constraints on older adults that are associated with role loss, such as the psychological impact of forced retirement and late-life unemployment. Research indicates that ageism is a common problem, present in many countries (Abrams, Russell, Vauclair, & Swift, 2011; Palmore, Whittington, & Kunkel, 2009), and that it is associated with the health and well-being of older people.

In an early study, Palmore (1981) estimated the prevalence of 20 different types of discrimination experiences, ranging from being told jokes about aging (the most common), being ignored and not taken seriously, being patronized, rejected as unattractive, and treated with less dignity and respect, attribution of health problems to aging, and denial of promotion or paid work. The least frequently reported events were those that indicated specific acts of discrimination. The Fraboni Scale of Ageism (FSA; Fraboni, Saltstone, & Hughes, 1990) elaborated more of Butler's theoretical constructs and included three dimensions of ageism: antilocution (antagonism and antipathy toward old people based on misconceptions and erroneous beliefs), specific discriminatory acts (e.g., the tendency to exclude them from groups), and avoidance of older adults. Men were more likely to report higher scores on the FSA (Fraboni et al., 1990), a finding that has been replicated many times. Rupp, Vodanovich, and Credé (2005) reexamined the factor structure of the FSA scale, modernized and replaced some items, and updated the names of the dimensions to stereotypes, separation, and affective attitudes to reflect new developments in the study of discrimination and prejudice. Rupp et al. (2005) reported that men and younger people were more likely to report higher scores. However, younger people do not endorse the most ageist attitudes in all studies. Using a measure designed to assess the impact of ageism on interaction (e.g., "Ignore old people because of their age" or "Avoid old people because they are cranky"), Cherry and Palmore (2008) found that younger and older people were about equally likely to endorse ageist beliefs. Women were more likely to endorse positive statements about older people than men. Bodner, Bergman, and Cohen-Fridel (2012) found that middle-aged Israelis were more likely to be ageist than younger and older adults. The oldest adults reported the highest avoidance of older people. Across all age groups, men reported more ageism (Bodner et al., 2012).

Measurement of ageism continues to transform in response to theoretical advances and changing social context. North and Fiske (2013) have introduced a new scale that measures tension in intergenerational relationships over the use of social resources, with dimensions tapping issues in resource succession across generations ("the older generation has an unfair amount of political power compared with younger people"), prescriptive avoidance of older people ("in general, older people shouldn't hang out at places for younger people"), and resource consumption by older adults ("older people are too big a burden on the healthcare system"). The purpose of this scale is to facilitate research on generational equity. Younger people scored higher on this measure, as did men (North & Fiske, 2013). Awareness of aging has also been introduced as a way to understand how discrimination and stereotypes against older adults influence subjective awareness of aging—how old a person feels (Diehl et al., 2014). Subjective awareness of aging may reflect internalization of ageism and have an impact on health and health behavior.

Other new empirical research studies consider ageism as a threat to health and well-being. Allen (2015) has suggested that ageism should be considered a chronic stressor and thus a social determinant of disease and mortality. Emile et al. (2015) have reported that endorsement of positive aging stereotypes among older people is associated with positive health outcomes such as self-efficacy in accomplishing physical activity. Levy (2009) has proposed that negative age stereotypes can be internalized by older adults, which is affirmed by the studies reported above. Levy and her colleagues recently reported that negative age stereotypes among older people are resistant to change, and that negative stereotypes contributed to hospitalization in a longitudinal sample of older adults (Levy, Slade, Chung, & Gill, 2015). Barber, Mather, and Gatz (2015) recently reported that "stereotype threat," knowledge that poor performance may be stigmatizing, affected the performance of healthy older adults on a cognitive test. In sum, there is adequate existing research to include the study of ageism and its possible health effects in the study of social exclusion.

Outcomes of Social Exclusion

Two psychosocial outcomes, loneliness and depression, are frequently studied as the potential consequences of social exclusion. A rapidly developing literature has examined risk factors for loneliness, the perception of lacking social ties when needed, including social isolation (Ong et al., 2016). Loneliness has also been defined as the "perception of being detached" from others (Biordi & Nicholson, 2008), or as the perception of not having the need for interaction or social support met (de Jong Gierveld, 1987). Short measures of loneliness are now used in larger population studies of older people throughout the world and examined along with more traditional measures of social isolation and integration that assess aspects of social networks and contexts (e.g., Cornwell, Laumann, & Schumm, 2008; Ellwardt, van Tilburg, Aartsen, Wittek, & Steverink, 2015).

Perissinotto, Cenzer, and Covinsky (2012), using the longitudinal US Health and Retirement Survey, showed that older adults reporting loneliness were likely to be older (71 or more years of age), female, of lower socioeconomic or minority status, more impaired, and to have more chronic conditions. All are established risk factors for social isolation (e.g., Pillemer & Glasgow, 2000). However, living arrangements were not strongly related to loneliness in the Perissinotto study. Although lonely older people were somewhat more likely to be living alone, most of those reporting any feelings of loneliness did not in fact live alone (Perissinotto et al., 2012). A US national study (Wilson & Moulton, 2010) suggested that lonely people might also be less likely to seek out social interactions. Those who were lonely were less likely to attend religious activities, to volunteer, and to take part in community activities, all of which are associated with higher levels of social integration (Wilson & Moulton, 2010).

These findings are echoed in European studies of loneliness. Victor and Yang (2012) reported that in the UK factors related to less daily social interaction are associated with loneliness, such as not being currently married, smaller household size, worse health, feeling depressed, hampered in daily activity, not being frequently in social activities, and lacking someone with whom to discuss personal matters (see also Fokkema, de Jong Gierveld, & Dykstra, 2012).

Not only do declining health, disability, and pain pose a risk for social isolation and loneliness: both social isolation and loneliness are hypothesized to affect physical health and well-being over the life span (Cornwell & Waite, 2009). Loneliness has been found to have a unique relationship to health and well-being even when more objective measures of social isolation are included in predictive models, such as living alone, marital status, number of active social roles, network size, and number of social relationships (Cornwell & Waite, 2009).

Loneliness and social isolation have also been found to be associated with physiological indicators of health and with medical outcomes. For example, Perissinotto et al. (2012) found that loneliness was associated prospectively with declines in mobility, increases in dependence for activities of daily living, and mortality over a prospective 6-year period in the US Health and Retirement Survey. The effect of loneliness held even when controlling for more objective indicators of social isolation, specifically living alone and urban versus rural residence. Hackett, Hamer, Endrighi, Brydon, and Steptoe (2012) reported, using the Whitehall II cohort in England, that loneliness was a predictor of stress-related inflammatory and neuroendocrine function indicators among women, indicating that loneliness may dysregulate the inflammatory and neuroendocrine systems. Loneliness has also been connected prospectively with the risk of developing Alzheimer's disease (Wilson et al., 2007).

Nevertheless, objective social isolation is also related to poorer health. Social isolation and loneliness have both been associated with premature or early mortality (House et al., 1988). A recent meta-analysis of 70 empirical studies (Holt-Lunstad et al., 2015) found that social isolation, loneliness, and living alone were all similarly related to the odds of early mortality (OR = 1.29, 1.26, and 1.32, respectively). These odds ratios are comparable to other known risk factors for early mortality, such as obesity. In a prospective study, Heffner, Waring, Roberts, Eaton, and Gramling (2011) found that social isolation, defined objectively using a version of

the Berkman and Syme (1979) index, was related to increased risk for coronary heart disease (C-reactive protein) and heart disease mortality in two studies, with the more socially isolated showing more than twice the odds of death from heart disease than the more socially integrated middle aged adults over a 15-year period.

Efforts to Counter Social Exclusion

Although rigorous experimental studies of interventions to counter social exclusion are lacking, extensive research has been conducted on programs to reduce social isolation (as one type of social exclusion) among older people; there are reviews by Cattan et al. (2005), Dickens et al. (2011), Findlay (2003), and Sabir et al. (2009). These articles reviewed published social isolation interventions with strong designs (i.e., those with control groups), including studies of engaging older adults in groups, one-on-one interventions (e.g., pairing older adults with professional or peer helpers), and telephone support. Interventions based on internet communication and social media strategies are also currently being tested, but were not available at the time of the reviews. Cattan et al., concentrating on intervention programs tested via randomized control trials (i.e., experiments in which participants were randomly assigned to a treatment to reduce social isolation or a control condition), reported that most programs designed to increase social integration and reduce social isolation did not achieve large or consistent improvements with the exception of programs that used group-based methods. Cattan et al. and Sabir et al. suggested that group-based methods were more likely to succeed because they more closely replicated the characteristics of daily interactions with friends, family, and neighbors, which in turn promoted more social activity.

A theoretically based group intervention model to encourage network growth was recently reported by Martin, Reece, Lauder, and McClelland (2011). The study reported a high attrition rate and mixed results. The treatment consisted of ten weekly group education sessions. The education was based on the model used in the Enhanced Recovery in Coronary Heart Disease Patients (ENRICHD) Trial and it focused on ways to develop support, overcome negative thinking, mitigate social anxiety, and increase social, communication, and problem-solving skills. Overall, the trial increased self-disclosure skills, decreased depressive symptoms, and increased feelings of belonging; however, the treatment group did not report increased social integration, an important aim of the trial. The high attrition was likely due to the number of sessions required to complete the trial.

Volunteering as a "Best Practice" in Reducing Exclusion

Among the various options for reducing social exclusion among older persons, we focus in particular on volunteering. Programs promoting volunteering are a special type of group-based interventions, and the weight of available evidence suggests

that they may be a promising way to promote social integration. Volunteering is a notable component of Active Ageing programs developed in Europe (e.g., Naegele & Schnabel, 2010).

A large body of research, reinforced by systematic reviews, has demonstrated the benefits of volunteering to older individuals. Positive effects have been found for such outcomes as better self-rated health, less functional limitation, improved psychological well-being, and a potential reduction in dementia risk (Anderson et al., 2014). Research also suggests that volunteering may provide protection against specific illnesses and health events, such as hypertension (Burr, Tavares, & Mutchler, 2011) and hip fracture (Warburton & Peel, 2008). Because of these proximal benefits, volunteering appears to reduce overall mortality risk (Jenkinson et al., 2013; Okun, Yeung, & Brown, 2013).

The most famous volunteer program engaging older adults in the USA is the Experience Corps (http://www.aarp.org/experience-corps/). The Experience Corps merges a theoretically based model of volunteer program practices to benefit society and a model to promote health among older adults. It was designed by gerontologist Linda Fried and Marc Freedman, the president of a major organization devoted to ending social exclusion of older people, Encore.Org. The approach of the Experience Corps is based on two theories used extensively in gerontology, the developmental theory of generativity (Erikson & Erikson, 1981) and the theory of social capital (Glass et al., 2004). Erikson and Erikson (1981) theorized that performing generative activities, those which benefit the well-being of others, help older adults maintain a sense of meaning in life and belief in their capacity to contribute to society. Social capital is defined as the sum of public goods that benefit everyone in a particular group. Social capital is often measured by researchers as the tendency to trust others and to participate in group, neighborhood, or community activities (Glass et al., 2004). The Experience Corps is based on the ideas that contributing to the building of social capital in neighborhoods and communities is a productive activity and that older adults who do so will benefit themselves as well as the community. The Experience Corps is also designed to promote intergenerational contact and social inclusion and counter the negative impact of ageism on older people.

The Experience Corps recruits older adults who are asked to volunteer a substantial amount of time, 15 hours a week, in low income, low resource elementary schools. The volunteers contribute to educational and social development programs that have been shown to improve outcomes for disadvantaged children. The intervention helps the children, the adults who volunteer, and the schools, and creates capital in the community. It is also important to note that Experience Corps has successfully engaged minority, lower income adults who live in neighborhoods of lower socioeconomic status, a group believed to be at higher risk of social exclusion.

The Experience Corps has been evaluated experimentally to investigate the benefits of social engagement on physical, cognitive, and social functioning in older adulthood. The research team randomly assigned older adults, most of whom were African American, to the Experience Corps program or a control group. The results showed that subjects in the Experience Corps program significantly increased physical activity levels, were involved in higher intensity cognitive

activities (which has benefits for aging adults), and increased their perceived level of social support (Fried et al., 2004). The authors are now conducting a larger scale experiment (Fried et al., 2013).

In Europe, volunteering has also been recognized as a useful tool to fight social exclusion of older people. The project Measures to Support Social Inclusion of the Elderly has focused on volunteer activities by older people. The project has been funded by the European Foundation for the Improvement of Living and Working Conditions (EUROFOUND, https://www.eurofound.europa.eu/), a body of the European Union that involves stakeholders in programs to improve better living and working conditions. The project was designed based on multiple case studies of voluntary organizations in 11 European countries (Denmark, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, the Netherlands, Poland, and the UK). The case studies represented European diversity, with both Social Democratic states (Denmark, the Netherlands) and more corporatist countries (Germany), southern Europe (Italy), and post-Communist states (Poland). Volunteering in Europe is more common in Social Democratic states than in corporatist, Mediterranean, and Post-Communist countries (Hank & Erlinghagen, 2010; Jehoel-Gijsbers & Vrooman, 2008; Ogg, 2005; Szivos & Giudici, 2004; Zaidi & Stanton, 2015). Overall, the case studies demonstrated that volunteering can facilitate the social inclusion of older people.

The European case studies also found that older volunteers were not representative of those most likely to experience social exclusion. Older adults who volunteered were more likely to have more social and economic resources. Those who did not participate in volunteering activities were less likely to have the resources that serve as a precondition for engaging in voluntary activities. This means that those who are at risk for social exclusion require different encouragement to volunteer (Naegele & Schnabel, 2010). Possible interventions are to involve "gatekeepers" who build bridges between those who are involved in volunteering and those who are not. Gatekeepers can bridge gaps by inviting family members, friends, and neighbors to become involved (Ehlers, Naegele, & Reichert, 2011).

In the project Mobilising the Potential of Active Ageing in Europe (MOPACT, http://mopact.group.shef.ac.uk/), special emphasis has been placed on understanding how poor health can discourage volunteering in older age (Anderson et al., 2014). The study demonstrated that, in contrast to healthier older people, older people with poorer health are more likely to volunteer when they are divorced or widowed, although more serious depression may prevent some from volunteering (Principi et al., 2015).

Conclusion

The goal of this chapter is to lay out the current state of theory and research on factors associated with social exclusion among older adults and to suggest ways to approach this issue through intervention and policy. We focus on research on two key components of social exclusion of aging adults, social isolation and ageism, and what is known about psychological impacts on older adults.

At the outset, we state that research and theory on social isolation (and its opposite, social integration) have moved toward the view that older adults do not inevitably draw away from social engagement, although the type of social engagement may change in order to compensate for increasing health problems, leaving or losing important social roles, and perceiving more restricted time horizons. We also find that research and theory have progressed beyond relying on relatively crude measures of social isolation (e.g., living alone) to a more multidimensional understanding of dimensions of social exclusion, including stereotypes that are based on ageism and their impact on social opportunities for older adults and self-stereotyping that may restrict seeking out social opportunities.

An important addendum to the research reviewed in this chapter is that the social environment or objective factors such as living alone, having few friends, and living in a low resource neighborhood with fewer resources for social participation are important risk factors for experiencing social exclusion. However, the impact of these environmental and social factors is likely to be dependent on individual life history, social context, and perhaps even public policy (Berkman, 2009). There are subgroups of older people who are more vulnerable to becoming socially excluded and experiencing subsequent negative psychological effects. Particular attention should be given to groups that may be particularly vulnerable, those with fewer social and economic resources across their life course, and those who are more likely to be living alone in old age (Hoff, 2008; Pillemer & Glasgow, 2000).

Despite the progress of the last decade in understanding social isolation among older adults, its prevalence, impacts, causes, and consequences, there remains a pressing issue: the relative paucity of theory-based interventions to reduce the components of social isolation, ageism, and role exclusion. Although we believe that the theory of social exclusion and the relationship it proposes between social inequality, social isolation, role exclusion, and ageism is useful to advance the field, a focus is needed on the separate components of social exclusion and testing interventions through randomized controlled intervention trials to improve them. In turn, trials must be designed to include participants who are hypothesized to have socioeconomic and demographic characteristics that will predispose them to experience the wide characteristics of social exclusion. Intervention designs would greatly benefit from the use of social, psychological, and behavioral theory (Dickens et al., 2011; Pillemer & Glasgow, 2000), a case in point being the promising findings from the evaluations of the Experience Corps.

Finally, we believe that research and interventions to help prevent social exclusion among older people would benefit from more widespread use of life course theory in longitudinal studies of the population to identify the life course antecedents of social exclusion (Berkman, 2009). We believe that research on the life course and social relationships strongly suggests that younger and middle-aged people would benefit greatly from education about the importance of maintaining their social connections from middle-age to older age. Social relationships are the foundation of successful aging. Intergenerational contact may be the basis of countering ageism.

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Part III
Psychological Strategies and Brain Mechanisms to Reduce the Negative Consequences of Social Exclusion

Emotion Regulation Following Social Exclusion: Psychological and Behavioral Strategies

Paolo Riva

Suppose you have been excluded, at school, on the Internet, at work, within your family context, or by your closest friends; or worse, simultaneously by a combination of these different sources and contexts. What would you do? A surmounting amount of research showed that social exclusion causes painful negative emotions, including hurt feelings, anger, and sadness, and reduces satisfaction of basic psychological human needs (such as the need for self-esteem or the need for control). Several chapters of this book have highlighted in detail the negative consequences of social exclusion at different stages of the human development and in different social contexts. I do not reiterate these negative effects here. Rather, this chapter focuses on what can be done after social exclusion has occurred. Specifically, this chapter considers the impact of deliberate forms of emotion regulation on responses to social exclusion by integrating findings from the literature on reactions to social exclusion with contemporary models of emotion regulation.

A Two-Dimensional Model of Emotion Regulation Following Social Exclusion

Generally, emotion regulation refers to the psychological process by which humans try to maintain desirable emotional states and to terminate undesirable ones (Gross, 1998; Gross, Richards, & John, 2006). Applied to the central topic of this book, emotion regulation can be thought of as the process by which humans try to decrease the negative and painful emotional states elicited by social exclusion while maintaining positive feelings associated with social belonging.

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In humans, the detection of social exclusion elicits a painful emotional reaction. Hurt feelings represent a case of blended emotions, in which several basic emotions, including sadness and anger, can be elicited at the same time by the same event (e.g., betrayal, humiliation, rejection; Shaver, Schwartz, Kirson, & O'connor, 1987). Hurt feelings ring an emotional alarm that calls for attention. Once such an alarm has been activated and perceived, cognitions and behaviors can be used to regulate the intensity and the duration of its severity. This might imply approaching towards the source of social exclusion, for instance, when an individual confronts directly ostracizing coworkers, or moving away from it, for instance, by hiding in the office. In any case, what the individual thinks or does following social exclusion can have a modulatory effect on the activated emotional reaction. However, time does matter. Immediately after social exclusion, negative emotions can be overwhelming and little might be done to regulate them (Williams, 2009; but see chapter "Coping with or Buffering Against the Negative Impact of Social Exclusion on Basic Needs: A Review of Strategies" for strategies that may buffer against the immediate impact of social exclusion). Yet, after a certain period of time, individuals regain the possibility to exert (at least some) control over their thoughts and behaviors. The latter is the stage I refer to in this chapter. It may not be a simple one-way process in which people move from the immediate reaction (i.e., reflexive stage) to a more reflective stage, but rather a circular process in which they alternate for some time from a reflexive reaction to the reflective one. Nevertheless, once an individual is able to apply regulatory strategies they do not only help regulate emotions, but also affect the recovery time and the long-term trajectory of inclusionary status (social inclusion vs. social isolation).

The strategies presented in the current chapter are classified according to two fundamental dimensions. The first dimension (cognitive–behavioral dimension) refers to whether the response is mainly directed through thoughts or behaviors. The second dimension (approach–avoidance dimension) refers to whether the response is directed towards the source of distress or away from it. These two dimensions have been identified in past work focused on affect regulation (Augustine & Hemenover, 2009; Reijntjes, Stegge, & Meerum Terwogt, 2006) and yielded the four clusters model depicted in Fig. 1.

As depicted in Fig. 1—albeit more fuzzy—a third dimension was added, considering the effectiveness of each strategy in the context of social exclusion. Accordingly, some strategies might be more functional than others in addressing social exclusion. With *functional*, I refer to the likelihood by which a specific strategy can ultimately increase the inclusionary status of an individual. At first, all strategies respond to the need of dampening negative emotions elicited by social exclusion. However, some are more effective than others in reaching the ultimate goal of increasing the inclusionary status in the long run—that is, making new social connections or restoring the existing ones. I consider this third dimension when discussing the details of each specific strategy.
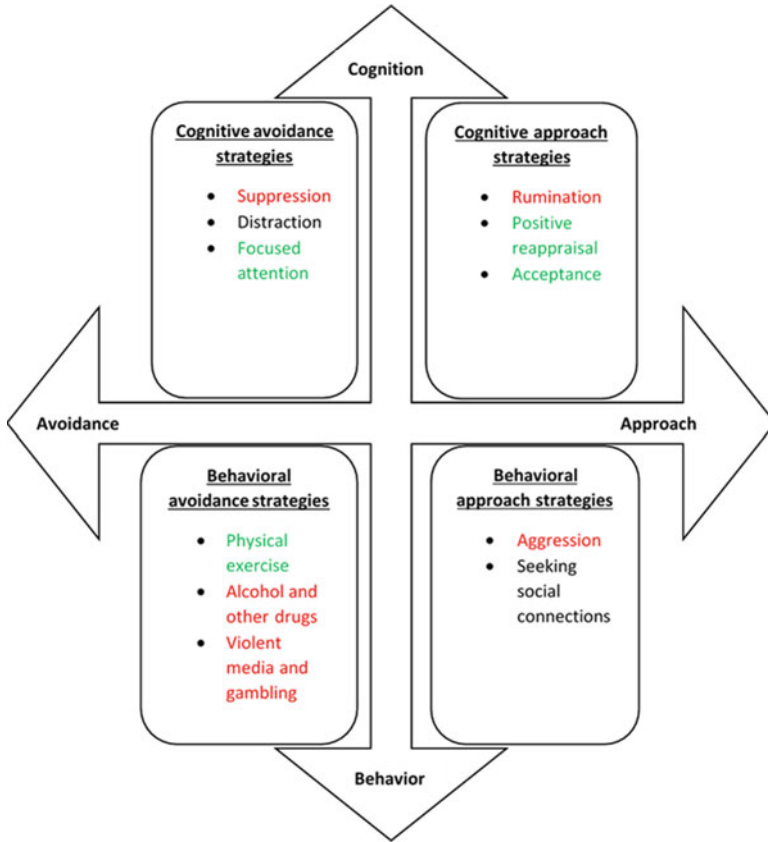
Fig. 1 A two-dimensional model of emotion regulation after social exclusion. In *red* are strategies that are likely to be dysfunctional responses to social exclusion; in *green* are the functional ones. Strategies *without color* are neither positive nor negative per se

Cognitive Avoidance Strategies

Strategies in this category involve active efforts to avoid thinking about the source of social exclusion by active suppression or by engaging in thoughts focused on objects unrelated to the hurtful event.

Suppression

Suppression is a form of emotion regulation that involves inhibiting the experience and/or expression of emotional states (Gross & Levenson, 1993). For example, an individual may conceal anger after being humiliated during a work meeting or attempt to hide signs of hurt feelings following relational conflict. Although emotional

suppression can be appropriate in some specific situations, such as concealing high levels of anxiety during a job interview or hiding an inappropriate laugh at a funeral, if used in an indiscriminate and inflexible way, it can be detrimental.

Psychological literature suggests it is difficult to suppress an unwanted thought. Accordingly, research showed suppressing a thought can actually increase its cognitive accessibility (e.g., "the white bear effect;" Wegner & Erber, 1992). Similarly, research has shown that suppressing emotions can backfire, that is, the use of suppression can actually increase the experience of negative emotions (John & Gross, 2004). The detrimental effects of suppression are not limited to an increased negative emotional experience; suppression also impairs cognitive abilities (e.g., memory) and increases cardiovascular activation (Richards & Gross, 1999). Furthermore, research has shown that emotional suppression impairs self-regulation (Muraven, Tice, & Baumeister, 1998). The reduced availability of self-control resources caused by the use of emotional suppression has been linked with a wide array of dysfunctional responses, such as compromised decision making processes and reduced inhibition toward aggression (Roberton, Daffern, & Bucks, 2012).

To my knowledge, no study so far has tested directly the role of suppression on responses to social exclusion. However, research has investigated the consequences of emotional suppression on social interactions. In a study, participants interacted in dyads of same-sex strangers in which they were instructed to suppress their emotion (i.e., *behave in such a way that your partner does not know you are feeling any emotions at all*"), to reappraise their emotion (i.e., "*think about your situation in such a way that you remain calm and dispassionate*"), or received no instruction (Butler et al., 2003). Results showed suppression, and suppression alone, disrupted communication and reduced participants' willingness to establish social connections. This result fits with the notion that emotional suppression is associated with less social closeness (John & Gross, 2004) and an impoverished social network (Srivastava, Tamir, McGonigal, John, & Gross, 2009). Moreover, a recent study showed that suppression can affect not only the person who engages in this form of emotion regulation, but also his or her interaction partner (Peters, Overall, & Jamieson, 2014). In this study, both the individual instructed to suppress emotions and his or her interaction partner (who received no instruction) showed dysfunctional physiological threat responses characterized by sympathetic nervous system arousal and vasoconstriction. Thus, the negative consequences of emotional suppression might extend to all actors involved in a social interaction.

In sum, suppression might make people seem unemotional from the outside, but the (recurrent) adoption of this strategy might put at risk an individual's psychological well-being and that of her/his interaction partners. However, research is needed to investigate the specificity of the effects of emotional suppression on responses to social exclusion.

Distraction

Distraction occurs when an individual actively directs attention away from the hurt feelings-provoking event toward an unrelated neutral or positive stimulus.

Distraction may involve thinking about the movie you watched, the book you read, or the music you listened to as opposed to thinking about the ongoing social event you were not invited to by your closest friends.

The benefits of the distraction lie in the power of this strategy to free the mind from the ruminative thoughts, which could otherwise arise following a threat to social belonging. Indeed, the rationale behind the use of distraction in the context of responses to social exclusion is to let the negative emotions cool down without using other, perhaps more dysfunctional, strategies, such as rumination (thinking over the exclusionary event in a repetitive manner) or relational aggression (insulting the source of social exclusion or an unrelated third party).

At first glance, distraction might seem one of the easiest ways to deal with the pain of social exclusion. Yet the apparent simplicity of this strategy could be deceptive. Indeed, for humans, social exclusion, similar to physical pain, elicits a direct call to the attentional system. This is one of the main functions of pain: by virtue of its unpleasantness, pain stops people from focusing on anything they were doing and requires immediate attention to the source of pain (Eccleston & Crombez, 1999). This attention-demanding effect that social exclusion shares with physical pain makes the use of distraction particularly challenging. People would need to exert a great deal of self-control over the immediate impulse of thinking about the hurtful event. Moreover, there might be circumstances in which distraction seems to fall outside the range of possibilities, at least in the first stages following the event; just consider cases of severe emotional pain, such as when a loved one dies or when one comes to know of a partner's betrayal.

From the point of view of empirical research, the possibility that distraction could facilitate recovery from ostracism was recently tested (Wesselmann, Ren, Swim, & Williams, 2013). In this study, participants were first randomly assigned to a manipulation of inclusionary status, namely the *Cyberball* game (see chapter "Methods for Investigating Social Exclusion"). After reporting their levels of psychological need satisfaction (e.g., self-esteem) and of negative emotions, half of participants were left free to think over their current feelings. The other half of participants were given a task, which involved watching four clips and trying to locate slight changes between the videos. The main purpose of the latter condition was to engage participants' attention in a distracting task, thus preventing rumination over the recent episode of ostracism. Results from this study showed that those participants who were distracted by the visual detection task subsequently reported higher levels of satisfaction of psychological needs, as compared with those who were allowed to ruminate. Thus, distraction can facilitate recovery following ostracism. This study has merit as it directly compares two possible strategies of emotion regulation, distraction and rumination. Ultimately, distraction can promote a quicker recovery from social exclusion exactly because it prevents the opportunity to ruminate (Hales, Wesselmann, & Williams, 2016).

However, distraction may not always be the best strategy. Considering the psychological processes implied in economic bargaining, one study compared the effectiveness of reappraisal and distraction in reducing the impact of anger elicited by provocation on the outcomes of economic negotiations (Fabiansson &

Denson, 2012). This study showed that immediate feelings of anger were reduced via both reappraisal and distraction; yet only reappraisal reduced anger for the total duration of the negotiation. Furthermore, in the context of provocation, those who reappraised proposed fairer economic exchanges than participants in the distraction condition. These findings suggest that although distraction may be effective at some levels—such as early stages—in containing negative emotions, only the strategies involving cognitive elaboration of the negative event can have long lasting effects and influence behavioral outcomes (e.g., via prosocial behavior). Thus, following social exclusion, distraction may induce a quick reduction of pain and negative emotions; nevertheless, in later stages, the unresolved hurt feelings may flare up again and affect the emotional and behavioral dynamics of future social interactions.

Crucially, the effectiveness of distraction further depends on the specific content of the distracting activity. Whereas some activities are harmless or even edifying (e.g., reading a classic novel), others, if sustained for long periods, can lead themselves to negative consequences. Later in this chapter, I discuss research showing that social exclusion can increase people's willingness to gamble or to interact with violent media. Prolonged exposure to these kinds of behavioral distractions is likely to cause more troubles, such as bankruptcy or increased aggression. Thus, people should be careful in choosing how to distract themselves from the painful feelings of social exclusion. Expose yourselves to new friends, or the old ones, or invest in new activities (e.g., volunteering in the local community) and hobbies (e.g., starting a dancing or a yoga class) and you will have a good chance to ultimately increase your inclusionary status. By contrast, stay away from cognitive and behavioral distractions that can bring you in a negative loop of social exclusion, bad habits (e.g., gambling), bad outcomes (e.g., financial losses), and more social isolation.

The benefits of distraction lie in freeing the mind from the recursive thinking over the exclusionary event, thereby freeing cognitive resources that can be adopted to think about new ways to restore social connection. Moreover, people can influence the outcome of their recovery according to the type of distraction method they choose to use.

Focused Attention

Focused attention is a strategy by which individuals selectively focus their attention on an object, such as a sound, a visual stimulus, or a physical sensation (e.g., breathing). To adopt it effectively (see Wallace & Goleman, 2006), an individual should learn how to sustain attention by bringing attention back to the target object (the breathing sensation) every time it moves towards a distractor (the source of social exclusion). Focused attention is one of the central tenets of the popular approach of mindfulness. Mindfulness relates to a state in which the individual is able to focus on the present moment with a nonjudgmental awareness (Kabat-Zinn, 1990).

Past research indicated that focused attention can help individuals cope with negative emotional events (Eberth & Sedlmeier, 2012). In the context of responses to

social exclusion, a study tested the idea that focused attention could reduce the psychological distress caused by ostracism (Molet, Macquet, Lefebvre, & Williams, 2013). First, participants were randomly assigned to a brief focused attention manipulation or a mind wandering condition. Specifically, half of the participants were asked to focus their attention on breathing. They were encouraged to experience the sensation of breathing by noticing the air entering and leaving the body. The other half of participants were asked to let their mind wander as they normally would throughout the day. Then, participants were randomly assigned to an ostracism or inclusion condition (using the *Cyberball* paradigm). Finally, participants were asked to report their satisfaction of psychological needs (e.g., the need for control) during the game and following a short delay. The results of this study showed that the levels of immediate distress did not differ between the condition of focused attention and that of mind wandering. However, the data suggested that after a short delay, ostracized people who had spent few moments focusing their attention on their breathing had a better recovery from social exclusion compared to those who were ostracized and allowed to let their mind wander. Focusing attention on breathing may require practice at first, but it is then an easy strategy to implement, it can be done everywhere, and it provides multiple benefits (Kabat-Zinn, 1990).

A few clarifications are needed in relation to this strategy. First, the difference between focused attention and distraction lies in that distraction requires an initial effort to engage in thoughts (e.g., thinking about your work tasks) or behaviors unrelated with the exclusionary event whereas focused attention necessitates sustained effort to direct attention to a specific stimulus. Second, early definitions of self-focused attention used a different interpretation of this label. These referred to typical features of people high in social anxiety, such as keeping one's attention sustained to their appearance, behavior, and thoughts. This type of self-focused attention can increase, rather than reduce, the negative effects of social exclusion (Zadro, Boland, & Richardson, 2006). By contrast, focused attention, such as focusing attention on breathing, can be considered one of the most functional and effective strategies for emotion regulation (Arch & Craske, 2006).

Cognitive Approach Strategies

Strategies in this category involve focusing on a distressful event (social exclusion) rather than trying to disengage from it. They include rumination, positive reappraisal, and acceptance.

Rumination

Rumination occurs every time attention is directed inward toward ongoing negative feelings and/or to the possible causes or consequences of such feelings (Gross, 1998). The possibility that rumination could obstruct psychological recovery

following ostracism was tested in the abovementioned study by Wesselmann et al. (2013). As I have already noted, results from this study showed that rumination—compared to distraction—hindered recovery from ostracism, as indicated by lower levels of basic needs satisfaction during the reflective stage. This finding seems to be in line with previous evidence showing that negative feelings caused by ostracism persist longer in those high in social anxiety (Zadro et al., 2006). Zadro et al. (2006) speculated that rumination might slow down those individuals' recovery.

Why does rumination delay recovery from social exclusion? Rumination has been linked with decreased willingness to engage in mood-lifting activities (Lyubomirsky & Nolen-Hoeksema, 1993) and with a reduced ability to disengage attention from negative emotional information (Joormann, 2006). Ultimately, a systematic use of rumination following social exclusion may lay the foundation for dysfunctional responses to it, increasing the risk for anxiety and depressive symptoms. This assumption is consistent with the psychobiological theory of depression (Slavich, O'Donovan, Epel, & Kemeny, 2010). This theory suggests that the link between social exclusion and depression is accounted for by negative cognitive thoughts (e.g., "*Other people don't like me*"), self-conscious emotions (e.g., shame, humiliation), and biological changes (e.g., activation of brain regions involved in processing negative affect and rejection-related distress, such as the anterior insula and the dorsal anterior cingulate cortex; see chapter "Brain Mechanisms to Regulate Negative Reactions to Social Exclusion") that eventually facilitate the onset of depressive symptoms. Within this framework, a longitudinal study tested the notion that rumination could mediate the link between stressful life events (e.g., social exclusion) and depression (Michl, McLaughlin, Shepherd, & Nolen-Hoeksema, 2013). Findings of this study showed stressful life events were associated with increased engagement in rumination. Crucially, rumination mediated the longitudinal relationship between stressful life events (e.g., exclusion) and symptoms of anxiety and depression.

How can people be helped to stop using rumination following social exclusion? Some participants who had recently experienced social rejection were invited to consider their hurtful experience with an abstract-contextual focus (e.g., considering the context of the social rejection), an abstract-evaluative focus (e.g., analyzing causes and implications of the social rejection), a concrete-experiential focus (e.g., considering the concrete aspects of the rejection experience), or no instruction (control condition; Rude, Mazzetti, Pal, & Stauble, 2011). Questions that induced an abstract-contextual focus were: "*How do you think you will view this event in 1–2 years? In what ways do you think the situation and your feelings about it are similar to what other people experience? Imagine you could view your situation and your feelings through the eyes of an impartial observer—someone who is able to know and comprehend all aspects of the situation.*" Questions that induced an abstract-evaluative focus were: "*Why do you think this happened? To what extent is this event or your feelings about it part of a pattern? What kinds of things could you have done to modify what happened and/or how you reacted to it?*" Finally, questions that induced a concrete-experiential focus were: "*As you recall the event, what physical sensations do you experience in your body? As you recall the event, what*

are your emotions? *How fast or slow is your breathing and how does this change as you recall the event*?" Results of this study showed that thinking about the causes and implications of the social exclusion event increased ruminative thoughts. By contrast, considering the event with an abstract-contextual focus caused a reduction in levels of rumination and depression symptoms 4 days later as compared with the other conditions. Distancing oneself from the hurtful event, putting it into a context, might free cognitive resources from ruminative thoughts, thereby preventing people from entering a negative circle of social exclusion, rumination, and depressive symptoms. This idea is in line with the notion that psychological distance can help people cope with social exclusion by taking a larger perspective. Seeing the exclusion episode through the eyes of a third person, or from a future time perspective, might help reduce ruminative thoughts and allow action planning.

Positive Reappraisal

Can exclusion make you stronger? By definition, positive reappraisal takes place when one tries to cognitively alter the mental representation of a negative situation to decrease its emotional impact (Gross, 1998). Strikingly, a study on extreme sports showed that individuals engaging in activities, such as BASE jumping, extreme skiing, and high-level mountaineering, tend to reframe fear from something negative to something positive (Brymer & Schweitzer, 2012). Fear does not disappear from the thoughts of those who practice extreme sports; it is its interpretation that changes. Rather than being something linked with dread and avoidance, it becomes a "friend," associated with the possibility of new challenges and a way to get to know oneself and one's limits. This study testifies how any psychological experience can be conceived as a downfall or as a challenge. Cognitive reappraisal allows one to change the consequences of the same psychological experience.

However, in relation to social exclusion, positive reappraisal may occur when someone receives a hurtful message from his or her partner and subsequently realizes that his or her partner had a bad day at work. The person who reappraises may experience some initial and reflexive hurt feelings, but subsequently lower such feelings by not interpreting the hurtful communication as a personal and intentional attack. Positive reappraisal implies reframing social exclusion as less negative, nonthreatening, compassionate, or even positive (e.g., "*I've learned something from this experience*").

One study examined the role of spontaneous reappraisal in facilitating recovery following ostracism (Sethi, Moulds, & Richardson, 2013). Participants were assigned to play the *Cyberball* game, and then they were asked to answer a set of questions. While analyzing participants' responses to this set of questions, the researchers noted that some of the participants (approximately 75 %) made spontaneous attempts to positively reappraise what happened during *Cyberball* (e.g., "*it's really not a big deal, since I'm in a room by myself*") whereas others did not (e.g., "*the other people just ignore my feeling and play by themselves. So I felt badly hurt.*"). Crucially, those who spontaneously reappraised the *Cyberball* experience

reported less need-threat and recovered faster compared to those who did not reappraise the ostracism experience. Although these findings are limited by the adoption of a small sample size, they suggest that people who are able to spontaneously reinterpret an exclusionary event in a more positive way might recover faster from it.

In another study (Poon & Chen, 2016), participants were again ostracized or included during the *Cyberball* game. After the game, half of the participants were exposed to the notion that ostracism is detrimental and harms one's growth and development. The other half were primed with the idea that ostracism can be beneficial and help an individual's growth and development. Then, aggressive responses were measured. The results showed ostracized participants who were primed with the notion that ostracism is detrimental behaved more aggressively than included participants. However, those primed with the notion that ostracism could aid growth were not more aggressive than included participants. Thus, thinking that an exclusionary event is not necessarily detrimental might reduce aggression following ostracism.

The ability to interpret events in a less negative way can be primed, learned, practiced, and improved. Accordingly, reappraisal is a technique largely used in cognitive behavioral therapy. Treatments of cognitive behavioral therapy include a wide array of interventions whose basic tenets focus on modifying behavior through the identification and modulation of irrational thoughts. In cognitive behavioral therapy, attention is devoted to the detection of negative thoughts and their interpretation with the aim to actively replace them with ones that are more positive and/or rational (Meichenbaum, 1977). Treatments of cognitive behavioral therapy have proved to be particularly effective in reducing anger. Individuals who are better at reappraising negative situations have been shown to experience less physiological activation, less anger, less negative emotion, and more positive emotion in anger-inducing situations (Mauss, Cook, Cheng, & Gross, 2007).

I conclude this section on reappraisal with a possible parallel between physical pain and social exclusion. On the one hand, recent theorizations argued that appraising physical and social pain in catastrophic ways (i.e., impossible to tolerate or overcome) might lead the path toward the perpetuation of such painful experiences (Riva, Wesselmann, Wirth, Carter-Sowell, & Williams, 2014). On the other hand, existing work suggested that physical pain does not necessarily imply negative psychological consequences (such as those highlighted in Riva, Wirth, & Williams, 2011). Indeed, people might actively seek physical pain to show self-mastery, endurance, mental and physical strength as well as for moral cleansing and dissonance reduction (Bastian, Jetten, Hornsey, & Leknes, 2014). "*Pain is weakness leaving the body*" is an old piece of propaganda used by the Recruiting Office of USA Marine to ensure that soldiers willingly undergo prolonged and exhausting physical exercises. On the basis of the abovementioned findings on fear (Brymer & Schweitzer, 2012), one may expect that reframing physical pain as a personal challenge rather than a condemnation might radically change its psychological experience. Although we should be cautious in thinking that this cognitive reframe could be applied to every circumstance, it might be helpful in some social exclusion epi-

sodes as well. A lover's rejection, negative feedback at school or at work, and even the silent treatment from a friend, are usually interpreted as something to fear (Riva, Williams, & Gallucci, 2014). However, after experiencing them, they could be functionally considered as means for change and personal growth (see Poon & Chen, 2016). In sum, learning how to reappraise painful events is a potential strategy for managing distressful situations, including everyday instances of social exclusion.

Acceptance

When it comes to being ignored or rejected, some of the immediate responses might include denying the situation, suppressing the hurt feelings, or ruminating over it. However, there is another way, which might work better in regulating one's emotion: acceptance. Acceptance means to acknowledge the episode of rejection, ostracism, or discrimination as real. Acceptance is another central tenet of mindfulness (Kabat-Zinn, 1990). The idea is to simply accept events as they are, without automatically labeling them as positive or negative, good or bad, right or wrong, fair or unfair. At least in trivial forms, social exclusion is something that humans face daily (see chapter "Social Exclusion in Everyday Life"). Thus, learning to accept it without immediately thinking of how negative it is, how negatively it will impact our day, how you will avenge it, and so on, might spare you cognitive and emotional resources. Being somehow inevitable, it might be better to accept some degree of exclusionary experiences rather than spending a lifetime overreacting to them. This could be a new perspective; rather than fighting against social exclusion or trying to change it, simply accepting it. Accept that a coworker might not want to share lunches with you, or a family member may want to ignore your presence at family gatherings. The literature on chronic physical pain showed that acceptance-based approaches can be an effective tool for a more satisfying and productive functioning, especially when all other treatment options have failed (McCracken, Carson, Eccleston, & Keefe, 2004). Patients who are able to "*learn to live with their pain*" were shown to be less depressed, less anxious, and more socially and physically active than those who accepted their pain to a lesser extent (McCracken, 1998).

It is important to note that acceptance, as described here, is different from the resignation stage described in the ostracism literature (Williams, 2009; see also Riva, Montali, Wirth, Curioni, & Williams, 2016). The resignation stage is characterized by an inability to recover threatened psychological needs and by feelings of alienation, unworthiness, helplessness, and depression. By contrast, acceptance as described here means giving up unproductive attempts to eliminate exclusionary events, acting as if such events do not necessarily imply personal failure, and being capable to engage toward living a satisfying life despite social exclusion (for a parallel on physical pain, see McCracken, 1998).

How can acceptance help individuals to better cope with social exclusion? It has been shown that people high in trait mindfulness, of which acceptance is one of the main components, have an enhanced emotion regulation in daily life, which in turn accounts for a higher perception of social connection (Quaglia, Goodman, & Brown,

2014). Acceptance can work by decreasing people's tendency to perceive negative events, such as ostracism and rejection, as self-threatening. By learning how to attend to current experiences in a nonjudgmental and accepting manner (Kabat-Zinn, 1990), individuals can increase their chances of implementing adaptive psychological responses (e.g., seeking social support) while decreasing those enacting negative ones (e.g., rumination, aggression). Responding to social exclusion in a nonjudgmental and accepting way seems beneficial not only for the victim but also for the interaction partners: avoiding implementing dysfunctional behaviors (enforced silence, aggression, passivity) could break the vicious circle that can characterize social interactions, thereby preventing an escalation of ostracism and relational aggression.

Moreover, mindfulness and its core component of acceptance could not only help alleviate the psychological impairments associated with experiencing ostracism, but also reduce the likelihood of using this form of social influence. Across two studies, Ramsey and Jones (2015) showed that a mindfulness intervention could decrease the frequency of ostracizing behaviors (e.g., shutting someone at work out of conversations). By showing that mindfulness can decrease the likelihood with which a person tends to use ostracism as a social influence weapon in interpersonal and intergroup contexts, this research suggests that mindfulness can be both a cure and a prevention strategy for social exclusion.

Behavioral Avoidance Strategies

This class of regulatory strategies involves active efforts not to focus on the exclusionary event by engaging in behavioral activities unrelated to the source or the context of social exclusion. Strategies discussed in this section include physical exercise, the use of alcohol and other drugs, and violent media and gambling as tools for emotion regulation following social exclusion.

Physical Exercise

Social exclusion can literally freeze you up (IJzerman et al., 2012). In one study, children experienced both ostracism and social inclusion (Barkley, Salvy, & Roemmich, 2012). After each experience, they were taken to the gymnasium, where they could freely decide to engage in physical or sedentary activities for 30 min. During this time period, physical activity was assessed through accelerometery and sedentary time assessment. Children accumulated fewer (22%) accelerometer counts and remained longer in sedentary activity (41%) following the ostracism experience as compared with the inclusion condition. These findings are consistent with previous studies showing that exclusion makes adults lethargic and self-defeating (Twenge, Catanese, & Baumeister, 2002). Indeed, excluded people are less willing to do effortful things that are healthy for them. Thus, social exclusion can reduce spontaneous physical activity.

However, one could wonder whether performing physical exercises can help deal with the negative consequences of social exclusion. Physical exercise, particularly aerobic exercise (e.g., running, biking, swimming, and dancing), has been linked with lower levels of anxiety and depression in children (Motta, McWilliams, Schwartz, & Cavera, 2012) and with positive emotions and better health outcomes in adults (Berger, 1996). Thus, it seems plausible to assume that actively engaging in physical activity could buffer some of the negative effects of social exclusion. This idea was recently tested empirically (Moran, 2013). In a first study, participants' self-reported frequency of exercise was related with the amount of negative emotions caused by experimentally induced ostracism. The results showed that lower levels of hurt feelings were related with higher self-reported aerobic exercise frequency. In another study, participants were first engaged in a manipulation of physical exercise: half of them performed aerobic exercise (heart rate 140–160 bpm) for about an hour whereas the other half stayed inactive. Then, they underwent a manipulation of social rejection, that is, the get-acquainted paradigm (see chapter "Methods for Investigating Social Exclusion"). The author found that physical exercise buffered against feelings of anger and sadness caused by social rejection.

Physical exercise alone can hardly be considered as the only treatment for the consequences of social exclusion. However, it falls within those behavioral distracting activities that can lead themselves to secondary benefits. In addition to shifting the focus of one's attention away from ruminative thoughts related to the causes and consequences of an exclusionary event to an ongoing physical activity, it can promote physical health and lift mood. Furthermore, some physical activities, such as dancing, represent a good way to establish new social connections or revive the old ones.

Alcohol and Other Drugs

A key implication of pain overlap theory (Eisenberger & Lieberman, 2005) is that interventions that reduce physical pain should also reduce the pain of social exclusion. Accordingly, Hales, Williams, and Eckhardt (2015) reasoned that if alcohol can reduce physical pain, it could also reduce social pain. The authors tested this idea by conducting a field experiment at a local bar. They approached patrons and invited them to participate in a study with a cover story. What they really did was to randomly assign participants to be ostracized or included in the *Cyberball* game, which was displayed on a portable device (i.e., a tablet). Then, participants were asked to report measures of immediate and delayed need satisfaction and mood. Measures of blood alcohol concentration and feelings of intoxication (i.e., "*I feel drunk*") were also assessed. Results showed that participant's subjective intoxication moderated the effect of ostracism on needs satisfaction and positive emotions. Specifically, for those who experienced ostracism, the more they reported feeling drunk the higher were their satisfaction of basic psychological needs and positive emotions. The authors also found that for participants who experienced social inclusion, the higher the feelings of intoxication the lower were their levels of satisfaction of basic

psychological needs and positive emotions. Overall, this research suggests that ostracism could be experienced as less aversive when people are high in subjective intoxication. However, alcohol may not only numb people to the negative effects of ostracism; it may also numb them to the benefits of social inclusion.

Not surprisingly, alcohol is not the only drug that can change the perception of our social life, including experiences of social exclusion. A study suggested that acetaminophen, an over-the-counter drug often used to treat physical pain and fever, can reduce daily reports of social pain (DeWall, MacDonald, et al., 2010). Furthermore, research found that marijuana can influence people's perception of threats to social belonging. Specifically, it was found that social exclusion has less impact among those who smoke marijuana relatively frequently compared to those who smoke marijuana relatively infrequently (Deckman, DeWall, Way, Gilman, & Richman, 2013). In other words, frequent marijuana users reported a lower threat to their psychological needs following ostracism. Another study established a link between social exclusion and illicit drugs (Mead, Baumeister, Stillman, Rawn, & Vohs, 2011). Participants primed with social exclusion expressed greater willingness to consume cocaine, especially when they saw the possibility of boosting their chances of social inclusion by doing so.

Drugs, including alcohol, marijuana, cocaine, and heroin, might be tools that people use to cope with an unsatisfactory inclusionary status. When feeling betrayed, isolated, humiliated, devalued, or ostracized, generally when there is a perceived lack of social connection (both in terms of quantity and quality), humans might turn to substance abuse to numb the emotional pain. It is needless to mention that such coping strategies, especially if used for a prolonged period, can be dysfunctional. Prolonged use of these substances has been linked with health issues, social problems, and financial difficulties. In sum, using alcohol and/or other drugs for an extended period of time to cope with the pain caused by a broken heart is like trying to put out the fire using gasoline.

The possibility that social isolation and social exclusion play a causal role in people's propensity toward substance abuse has practical implications that go beyond a discussion on emotion regulation. Some of the traditional approaches to substance abuse involved relocating individuals with drug abuse issues, thereby potentially further disrupting their social connections (e.g., with family members) rather than invigorating them. Following the perspective of the current review, that considers social exclusion a possible cause for substance abuse, interventions should aim at fortifying the inclusionary status of an individual as one antidote to drug abuse. In general, rather than isolating drug users via segregation, discrimination, and stigma, policy makers should consider the possibility that social inclusion is one solution to problems linked with drug abuse.

Violent Media and Gambling

Excluded people might also deal with their pain by becoming more attracted to violent media. In a recent study (Gabbiadini & Riva, 2016), participants' inclusionary status was manipulated using *Cyberball*. Then, they were given an opportunity to choose among nine different video games presented in random order. Video

games were divided in three different categories: prosocial video games (ER, City Crisis, Zoo Vet), nonviolent video games (Guitar Hero, Tony Hawk's pro skater, Mini Golf 3D), and violent video games (GTA 5, Mafia II, Counter Strike). Each video game was presented with a picture of the original package, its description, its Pan European Game Information (PEGI) rating as well as a screenshot of the game. For each video game, participants were asked to rate its perceived violence and its moral acceptability level and then to express the desire to play with it. The results showed that social exclusion increased the perception of moral acceptability of violent video games and increased anger, which in turn predicted the preference to play with violent video games.

Crucially, a consistent amount of research has shown that exposure to violent video games can foster aggression (Anderson et al., 2010). Thus, there is another example of a dysfunctional loop. Being excluded can increase the probability of choosing exposure to violent media (perhaps to deal with anger caused by social exclusion) and exposure to violent media increases aggression. Ultimately, the person who chooses violent media to deal with social exclusion might end up more socially isolated than before because of higher antisocial tendencies.

Finally, excluded people might also be more likely to gamble. In a study, participants were given the chance to gamble at a slot machine following a manipulation of ostracism (Riva & Sacchi, 2016). The data showed that excluded participants gambled longer at the slot machine than did non-excluded participants. This result is seemingly counterintuitive in light of theory noting that excluded people are motivated to refortify their need for control (Williams, 2009). Indeed, gambling may further deplete the need for control, intensifying the negative feedback loop. However, this finding is consistent with earlier research showing that excluded participants exhibit more self-defeating behavior, including poor decision-making, unhealthy choices, and procrastination (Twenge et al., 2002). One possible explanation for the exclusion–gambling link is the reduced self-regulation caused by social exclusion (Baumeister, DeWall, Ciarocco, & Twenge, 2005). Another possible explanation is that gambling decreases the negative emotions elicited by social exclusion. Although this might work in the short run (as a form of emotion regulation), in the long run an individual who chooses to gamble to deal with an exclusionary status is likely to encounter economic losses and further social isolation.

In sum, this research may explain some of the widespread appeal of alcohol, marijuana, violent media, and gambling; especially among individuals at the margins of our societies. Obviously, this research does not advocate for use of alcohol, marijuana, or gambling to deal with social exclusion. Research has shown surmounting amount of negative effects and health risks associated with these behaviors. They might temporarily dampen the negative emotions associated with social exclusion, but they are also likely to create more problems in terms of financial losses and health issues. Ultimately, these troubles might further increase the social exclusion that a person initially experienced. Psychologists, practitioners, and policy makers should consider social exclusion a possible cause of substance abuse and jointly work on reducing the likelihood with which excluded individuals choose these behaviors to deal with their exclusionary status.

Behavioral Approach Strategies

These strategies aim at directly addressing or confronting the source of social exclusion or alternative sources of social connection. Strategies included in this category are aggression and seeking social connections.

Aggression

Research showed that social exclusion can induce people to respond either more prosocially or antisocially (see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion"). For instance, a study showed that participants receiving feedback that no one wanted to work with them following a short interaction with others blasted a target with higher levels of aversive noise than did those who did not receive rejecting feedback (Twenge, Baumeister, Tice, & Stucke, 2001). Aggression might appear a paradoxical response to social exclusion: How can a person foster social connections through it? When the goal is to regain a satisfactory level of inclusion, lashing out seems, and likely is, self-defeating. According to Williams (2009), aggression may be one way to regain control and/or attention from the social environment, in an attempt to repair the damage to the fundamental psychological needs for control and meaningful existence (see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion" for a discussion on how aggressive behavior might be motivated by the need to reestablish a sense of control and meaningful existence).

Aggression may also serve an emotion regulatory function. In a study (Bushman, Baumeister, & Phillips, 2001), participants were led to believe in the catharsis theory, namely the idea that venting can reduce anger and its associated aggressive impulses. Then, the same participants underwent a mood-freezing manipulation by which some of them were primed with the notion that their emotional states were temporarily frozen (by a pill), whereas others were not. Participants acted more aggressively when they thought that aggression could help them to get rid of their negative emotions (i.e., anger). However, when people thought that acting aggressively would not result in a decrease of anger, aggression was reduced. Although subsequent research consistently showed that venting anger actually increases aggression (Bushman, 2002), this study suggested that people might act aggressively when they think they can regulate their negative emotions (e.g., they can feel better afterwards) by doing so.

The same process could occur in the context of social exclusion in which acting aggressively might become a tool to manage the painful emotions caused by rejection and ostracism. Accordingly, people who think that aggression can reduce the negative emotions following social exclusion might be more prone to react aggressively to it (Leary, Twenge, & Quinlivan, 2006). However, although venting following social exclusion might temporarily reduce negative emotions (at least for those who believe

that), it is ultimately likely to further increase aggressive behavior (Bushman, 2002) and exclusionary status.

Strikingly, aggression is a common behavioral response that follows both social and physical pain (Berkowitz, 1993; Riva et al., 2011). From an evolutionary stand-point, the vulnerability induced by physical pain might have led to aggression as a defensive response. Indeed, in the context of physical pain, when escaping the scene is not possible, readiness to aggress might minimize the chance of further injury or death. Nevertheless, in the context of social pain, lashing out at others is likely to invite further social exclusion.

Seeking Social Connections

Making new social connections or cultivating old bonds represents another typical response to social exclusion. Accordingly, research showed that exclusion fosters motivation to forge social connections with new potential sources of affiliation (Maner, DeWall, Baumeister, & Schaller, 2007; see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion"). Socially excluded individuals are sensitive to social cues, especially those that signal chances of social acceptance (DeWall et al., 2011). A study investigated how the number of people accepting someone affects negative emotions following social exclusion (DeWall, Twenge, Bushman, Im, & Williams, 2010). Results showed that negative emotions (e.g., anger, sadness, hurt feelings, anxiety) decreased as a power function according to the number of people who accepted the participant. In other words, these findings indicate that people are strongly influenced by the first person who offered them acceptance following exclusion, with each additional acceptor having a diminishing incremental effect on reducing negative emotions linked with social exclusion. Thus, obtaining even a minimal amount of social connection can modu-late the emotional consequences of social exclusion. Along this line, another study focused on the rejection-aggression link found that excluded people are less aggres-sive when positive social connections are evoked (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). Thus, seeking for reconnection appears as the ideal antidote to social exclusion.

However, the willingness of socially excluded individuals to pursue new social bonds might have important side effects. Being a tactic of social control, rejection and ostracism can be weapons used to manipulate attitudes and behaviors of other persons (Williams, 2009). The corrective function of social exclusion is manifested in many social contexts; just consider the employment of time-outs in school or the use of solitary confinement in the penal system.

Accordingly, people can deal with the pain of social exclusion (e.g., regulate their emotions to feel better) by becoming more susceptible to all major forms of social influence: conformity, compliance, and obedience. Indeed, excluded people tend to conform more to the majority opinion compared to those who are not excluded (DeWall, 2010; Williams, Cheung, & Choi, 2000). The same effect applies to compliance. Carter-Sowell, Chen, and Williams (2008) found that

ostracized participants were more likely to comply with a request to donate money across different compliance tactics. Finally, social exclusion can increase the likelihood of obeying an experimenter's explicit direction to do something effortful in uncomfortable conditions (Riva, Williams, Torstrick, & Montali, 2014). Overall, these data suggest that exclusion makes people more vulnerable to social influence. The effectiveness of social exclusion as a weapon of social control lies in the psychological vulnerability that it causes. These studies were based on the typical minimal manipulations of social exclusion that are administered through a computer usually in less than 2 min. If such manipulations are effective in making people more willing to conform, comply, and obey, one can wonder how far people could be willing to go when the experiences of social exclusion extend from few seconds to days, weeks, or even years.

These studies showed another dark side of social exclusion. It makes people more willing to do something that they would not do in the absence of a social threat. Making people aware of the psychological vulnerability that comes with social exclusion might help victims stay away from those who want to exploit them. Although awareness of this danger seems like the first tool that victims of social exclusion can adopt, research is needed to explore ways that can help excluded people not become targets of abusive relationships.

Directions for Future Research: Regulating Emotions Following Social Exclusion

In the following sections, I consider some of the future directions that research on emotion regulation should take in the specific context of social exclusion. Factors that are considered are the role of individual differences, controlled versus automatic processes, intrinsic versus extrinsic emotion regulation, social and physical pain overlap, psychological flexibility, and chronic social exclusion.

Individual Differences

When it comes to dealing with the consequences of social exclusion, there is not the perfect strategy that works for everybody. Social exclusion is deeply painful, and humans are hardwired to quickly detect it. However, there are several approaches that people can try to better deal with it. Some people might find that mindfulness approaches (e.g., focused attention, acceptance) work for them. Others might find it hard to implement them and benefit more from less "meditative" and more "arousing" strategies (e.g., physical exercise) or from a combination of both (e.g., "mindful running").

As an illustration, consider that people vary in their capability to figure out how they feel. Some tend to be good at detecting their current feelings, which in turn can inform them about the valence of the situation. Other people tend to be the opposite,

namely, they are unable to report or express their feelings. Earlier research found that those who are better at figuring out how they feel are also better at regulating their emotions (Barrett, Gross, Christensen, & Benvenuto, 2001). Overall, accumulating evidence suggests that people could benefit from the use of different strategies in response to social exclusion according to their ability of figuring out how they feel (Kashdan, Barrett, & McKnight, 2015).

Research has also linked emotion regulation strategies with differences in attachment styles, that is, an individual's psychological representation of self and others, which is shaped throughout early childhood relationships with primary caregivers, and influences relationships across the lifespan. Accordingly, secure attached individuals have been found to use predominantly strategies linked with the emotion-eliciting event (e.g., addressing directly the source of conflict) whereas avoidantly attached individuals seemed more likely to increase psychological distance between the transgressor and themselves (Shaver, Mikulincer, Lavy, & Cassidy, 2009). Finally, a study showed that some people are particularly able to spontaneously reframe emotional events in order to decrease their emotional impact (reappraisal) following provocations (Mauss et al., 2007). Time is also a variable; regardless of the adopted strategy, some people are able to cope with threatening events more quickly than others (e.g., people low vs. high in social anxiety; Zadro et al., 2006). These are just a few examples of how individual differences may play a role in the study of emotional regulation following social exclusion. However, being a relatively new field of inquiry, future research is needed to investigate how regulatory responses to social exclusion are linked with individual differences.

Controlled and Automatic Processes of Emotion Regulation

According to dual process models (Chaiken & Trope, 1999), a great variety of psychological processes—ranging from persuasion to attitude–behavior relations, to prejudice and stereotyping, to impression formation—can be divided in two general classes: controlled and automatic. Controlled processes operate within conscious awareness, necessitate active volition of the self, are initiated intentionally, and require considerable amounts of cognitive resources. By contrast, automatic processes may occur outside of conscious awareness, are elicited unintentionally, and require little amounts of cognitive resources.

Despite the centrality of the distinction between controlled and automatic processes in virtually all areas of psychological inquiry, emotion regulation strategies—such as those I have reviewed in this chapter—are still characterized by a predominant focus on controlled processes over automatic ones (for some exceptions, see research on affect labeling reviewed in chapter "Brain Mechanisms to Regulate Negative Reactions to Social Exclusion"). Considering that social exclusion impairs self-regulation (Baumeister et al., 2005), that is, the ability to exert control over the self, a lack of knowledge on processes that require less cognitive resources is somehow ironic. When the motivation to exert control over the self is

reduced following social exclusion, understanding the role of automatic forms of emotional regulation could be crucial, as they are not dependent on the cognitive and emotional resources that are left in the victims of social exclusion.

A notable exception is a series of nine studies that tested the hypothesis that short-term social exclusion results in a heightened automatic accessibility of positive affect (DeWall et al., 2011). Results showed that participants who experienced exclusion spontaneously recalled happier memories of their childhood, generated more happy words, and showed an enhanced attunement to positive information on a visual cuing task than non-excluded participants. Further, suggesting the role of individual differences, data from these studies showed that some of these automatic emotion regulation responses occurred only for people low in depression and/or high in self-esteem. This research fits nicely with previous work on automatic behavioral regulation, showing, for instance, that excluded people tend to engage in behavioral mimicry to regain a sense of belonging (Lakin, Chartrand, & Arkin, 2008). Thus, people might respond to short-term social exclusion by becoming more attuned to positive emotions.

Along this line, a recent study examined the relationship between interoceptive sensitivity, that is, the ability to detect bodily signals, and reactions to social exclusion (Pollatos, Matthias, & Keller, 2015). The results showed that a higher ability to detect bodily signals, such as the ability to perceive one's heartbeats accurately, was associated with lower distress following social exclusion. In this study, higher levels of interoceptive sensitivity were associated with higher levels of emotion regulation strategies, such as reappraisal and suppression. Overall, this research suggests automatic emotion regulation processes can serve beneficial functions. However, much more research is needed to identify and foster the utility of automatic regulatory processes.

Intrinsic Versus Extrinsic Emotion Regulation

The research presented in this chapter refers to intrinsic emotion regulation, which occurs when the goal to regulate the magnitude or duration of the emotional response is activated in oneself. However, recent emphasis has been placed on extrinsic or interpersonal emotion regulation (Coan & Maresh, 2014), which takes place when the goal of regulating the emotional response is activated by someone else.

In a study, female participants underwent a threat of receiving an electric shock while their hand was held by either a stranger or their spouse (Coan, Schaefer, & Davidson, 2006). When the hand was held by their spouse (compared to by a stranger or to a no hand-holding condition), participants exhibited a reduced activation in threat-related brain areas (e.g., anterior insula and hypothalamus; see chapter "Brain Mechanisms to Regulate Negative Reactions to Social Exclusion"). The attenuation was moderated by the quality of the relationship. This is just an example, but it suggests one of the possible ways in which extrinsic regulation can be studied in the context of responses to social exclusion in future research.

Social and Physical Pain Overlap

Several studies have focused on emotion regulation strategies in physical pain management, providing evidence for the effectiveness of these coping strategies in the context of physical pain. Studies showed that focused attention (Zeidan et al., 2011), positive reappraisal (Tracey, 2010), pain acceptance (Keogh, Bond, Hanmer, & Tilston, 2005), and social support (Brown, Sheffield, Leary, & Robinson, 2003) effectively reduce physical pain. Whereas research on psychological strategies for physical pain modulation is relatively old and established (Scott & Barber, 1977), relatively few studies looked at feasible ways to help people cope with the negative impact of social exclusion. Accordingly, based on the psychological overlap between physical and social pain (Riva et al., 2011), one may expect that psychological strategies that modulate physical pain perception can also modulate the emotional pain caused by social exclusion. Future studies should consider this possibility.

Psychological Flexibility

In learning how to functionally react to instances of social exclusion, one psychological feature might be the best ally: psychological flexibility. One strategy, such as distraction, might work on a specific situation, at certain times in a person's life, or in a combination of both. However, if applied in a rigid manner or irrespective of the context, the effectiveness of the strategy could be strongly reduced. Therefore, rather than trying to apply the same strategy to any everyday instance of social exclusion, the ideal responder would know a repertoire of strategies and apply them according to available cognitive and emotional resources and the specificity of each situation. There might be cases in which emotional suppression, or even rumination, represents a functional way to deal with exclusion; in other cases, it could be focused attention, acceptance, or reappraisal. Indeed, the outcome of emotion regulation depends upon an individual's ability to flexibly implement a specific strategy in accord with situational demands (Bonanno, Papa, Lalande, Westphal, & Coifman, 2004). Accordingly, a qualitative study suggests that individuals with higher levels of psychological flexibility in terms of emotion regulation strategies coped better with ostracism experiences (Waldeck, Tyndall, & Chmiel, 2015). Thus, it is possible that people who recover faster and in more functional ways from social exclusion do so because of an access to, and use of, a wider range of emotion regulation strategies. Similarly, in the context of physical pain, a study found that psychological flexibility is key for an effective physical pain management (Vowles & McCracken, 2010). Psychological flexibility should also be one focus of future research.

Chronic Social Exclusion

In real life, experiences of ostracism, rejection, and discrimination can have consequences far more extreme than those that researchers observe when participants are left out, for instance, from an online interaction game of virtual catch with two unknown avatars for about 1 min (Riva, Wesselmann, et al., 2014). Chronic social exclusion can be defined as the experience of being kept apart from others physically (e.g., being left alone) or emotionally (e.g., being ignored or told one is not wanted) for a prolonged period of time (e.g., more than 3 months). Recently, a study compared different chronic (i.e., lasting for more than 3 months) conditions: social exclusion, physical pain, hypertension, and kidney disease (Riva et al., 2016). Results suggested that chronic experiences of social exclusion were associated with higher levels of negative emotions and alienation, unworthiness, helplessness, and depression compared to patients with chronic physical pain, chronic hypertension, or chronic kidney disease. According to a theoretical model of chronic social exclusion (Riva, Wesselmann, et al., 2014), one of the main detrimental effects of prolonged social disconnection is a constantly impaired self-regulation, including emotional self-regulation. This phenomenon describes the crux of chronic social exclusion: strategies to reduce its impact would require control over the self (e.g., to regulate emotion, cognition, and behavior) but such resources are impoverished by the occurrence of painful emotions. In other words, the constant presence of painful feelings may prevent the recuperation of emotional and cognitive resources that are necessary to implement emotion regulation strategies.

For this reason, it might be easier to protect someone from entering a state of chronic social exclusion than to get her or him out of it. However, if research on how to deal with short-term instances of social exclusion in functional ways is still in its infancy, studies concerning possible exit strategies from conditions of chronic social exclusion are virtually zero. It is possible that some of the strategies reviewed here can be applied to prevent someone from entering a condition of chronic social exclusion or to get him or her out of it, but future research is urgently needed to determine the specificities that characterize prolonged forms of social exclusion.

Conclusion

To successfully form and maintain social bonds, the ability to regulate one's own emotions is key. The taxonomy proposed here, far from being comprehensive, could serve as a starting point in an attempt to delineate the possible regulatory strategies that can be adopted to deal with social exclusion.

The focus of this contribution is a psychological one, namely, how to deal with the consequences of social exclusion through emotion regulation. Other disciplines focus on different levels, for instance, political scientists are interested in reducing social exclusion at the macro societal level. Moreover, whereas several attempts have been conducted in the past decades to try limiting the incidence of exclusion

(e.g., Cattan, White, Bond, & Learmouth, 2005; see chapter "Research in Social Gerontology: Social Exclusion of Aging Adults"), research has begun to explore the potential of considering the victims' perspective. Indeed, how an individual responds to exclusion matters. If people can perceive everyday forms of exclusion as events that can be tackled, rather than as insurmountable stressors, they will feel better in the short run and stay healthier in the long run. They will also be more likely to find social acceptance in both established and new social networks. However, it is important to recognize that research on how to reduce the consequences of social exclusion is still in its infancy. Although a surmounting amount of evidence showed that exclusion can cause severe psychological distress and be deeply painful (for reviews, see Part II in this volume), relatively few studies have addressed the issue of how to reduce such consequences, psychologically speaking.

Emotion regulation affects all stages that characterize emotion, including the generation, the experience, and the expression of the emotion. Regulatory efforts can inhibit, alter, or obstruct the emotion in order to give rise to a more desirable mental state. The most direct regulation strategy involves addressing the source of social exclusion and restoring the social connection that was threatened. When circumstances (a combination of situational and individual variables) permit, this should be the ideal strategy. However, when it is not possible to directly address the problem that caused the exclusionary event in the first place, other strategies could be adopted as a function of long-term goals. Our detection system for social exclusion evolved in an environment completely different from the one we live now. Along the course of our evolutionary history, a single exclusionary event from the caregiver or the social group could mean certain death. However, in our changing society, the possible forms of social exclusion have become countless (just consider the Internet) so that the human tendency to overdetect social exclusion and quickly react to it could not be so functional anymore. Thus, regulating emotions following social exclusion may represent one effective way to help maintain psychological well-being when facing social exclusion in everyday life. By learning what psychological approach is most effective, people can be helped to cope with everyday instances of exclusion. The aim is to foster a cycle of adaptive potential, that is, activating a positive feedback loop in which functional reactions to threats of exclusion diminish the likelihood of further exclusion and increase the likelihood of fostering and maintaining new social connections. Adaptive outcomes can propagate over time.

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Coping with or Buffering Against the Negative Impact of Social Exclusion on Basic Needs: A Review of Strategies

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Being socially excluded is a highly aversive experience that entails several negative consequences for the person concerned (for reviews, see Williams, 2007, 2009; Part II in this volume). According to Williams (2009), social exclusion is quickly detected prior to any cognitive appraisal of the situation (but see Rudert & Greifeneder, 2016, for a different perspective). In the reflexive stage, the four basic human needs for belonging, self-esteem, control, and meaningful existence are threatened, and individuals experience pain and negative affect. In the subsequent reflective stage, the exclusion episode is cognitively appraised and possible coping strategies are activated to restore the threatened needs. In this stage, both dispositional differences, such as social anxiety (Zadro, Boland, & Richardson, 2006) or an interdependent self-construal (Ren, Wesselmann, & Williams, 2013), and situational factors, such as the relevance and meaning of the exclusion episode or the underlying motives attributed to it, influence the speed of psychological recovery. With regard to attributions, for instance, Wirth and Williams (2009) demonstrated that psychological recovery from social exclusion is accelerated when the exclusion episode is attributed to a temporary group membership (e.g., same color of clothes) as compared with a permanent, invariable group membership (e.g., gender). Correspondingly, Goodwin, Williams, and Carter-Sowell (2010) showed that attributing social exclusion to race (i.e., a permanent group membership) retards recovery.

In addition to the impact of dispositional differences and situational factors on recovery—which mostly fall outside the individual's circle of influence—excluded individuals can facilitate recovery by actively coping with the threat social exclusion

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poses to their basic needs. Adaptive coping strategies to restore basic needs satisfaction are acts useful for reestablishing social connections, such as ingratiating oneself with others by spending money on a product symbolic of group membership (Mead, Baumeister, Stillman, Rawn, & Vohs, 2011) or creating opportunities for social contact by preferring teamwork over working alone (Maner, DeWall, Baumeister, & Schaller, 2007). However, there are situations in which potential affiliation partners are absent or the expectation of gaining social acceptance is low. In such situations, social withdrawal or aggressive acts (i.e., acts intended to harm others; Anderson & Bushman, 2002) become more likely because aggression may help restore a sense of control and being recognized as existing (Williams, 2009). Because social withdrawal and aggression can be detrimental for the individual and the social environment, it is important to make alternative coping strategies available that help excluded individuals restore need satisfaction when the prospect of social acceptance is low. Research on such coping strategies is reviewed in the first part of this chapter.

Coping strategies are utilized after the individual has shown reflexive responses to social exclusion such as need threat and negative affect. By contrast, to buffer the individual against the reflexive responses, strategies have to be utilized prior to or at the onset of the exclusionary event. We introduce a new and promising approach to mitigating or preventing the reflexive responses. This approach may be surprising given the multitude of findings suggesting that reflexive responses to social exclusion are resistant to change. Indeed, research has shown that social exclusion is a threatening and negative experience even if the reasons for the exclusionary event cannot be attributed to the self, for instance, when the exclusion occurs due to technical problems (Eisenberger, Lieberman, & Williams, 2003) or is based on a preprogrammed script (Zadro, Williams, & Richardson, 2004). Further, exclusion remains aversive even if the inclusion in the group is not desirable because the inclusion in the group costs money (van Beest & Williams, 2006) or the group is an out-group (Smith & Williams, 2004; Williams, Cheung, & Choi, 2000; Wirth & Williams, 2009) or a despised group (Gonsalkorale & Williams, 2007). However, recent findings attest to moderation even in the reflexive stage. We argue that such moderation can be expected when strategies help build up strong psychological resources, such as belonging, self-esteem, control, and meaningfulness, prior to or at the onset of the exclusionary event. Consistent with our *psychological resource hypothesis*, effective strategies to buffer the reflexive responses to social exclusion share the potential to help build up psychological resources. Research on such buffering strategies is reviewed in the second part of this chapter.

Strategies to Facilitate Psychological Recovery from Social Exclusion

In this part of the chapter, we review research on strategies that can be used after the exclusionary event to facilitate psychological recovery, especially when no promising affiliation opportunity is available. Such coping strategies help restore need satisfaction and improve mood, and thereby reduce maladaptive reflective

responses to social exclusion such as social withdrawal and aggression. The coping strategies we focus on are reminders of social bonds, social surrogates, and turning to religion.

Reminders of Social Bonds

Many people have photographs of loved ones in their wallets or stored on their smartphones; married people wear wedding rings as a sign of their relationship; and students express their group membership by college sweatshirts. All these things may be regarded as tangible representations of social bonds, which can be used by excluded individuals to regain a sense of belonging (Gardner, Pickett, & Knowles, 2005). Gardner et al. (2005) reported one study in which participants were asked to relive and write about an experience of either rejection or (nonsocial) failure while having a photograph of either a friend or a liked celebrity on the desk. In accordance with the assumption that photographs of loved ones may be reminders of existing social bonds and thereby boost a sense of belonging, Gardner et al. reported that the mood of participants who relived an exclusionary event remained almost unchanged when the photograph of a friend was left on the desk, but dropped significantly when the photograph of a celebrity was within sight. By contrast, the mood of participants who relived a failure was not influenced by the kind of photograph on the desk.

Nowadays, social networking sites such as Facebook have gained importance as a way to communicate with others and to maintain or strengthen social relationships. It therefore seems reasonable to assume that Facebook reminds users of social bonds and helps restore a sense of belonging following social exclusion. Initial evidence for this assumption was recently provided by Knausenberger, Hellmann, and Echterhoff (2015). In their study, Knausenberger et al. used the virtual ball-tossing game Cyberball (Williams et al., 2000) to manipulate social inclusion versus exclusion (for more information on Cyberball and other social exclusion paradigms, see chapter "Methods for Investigating Social Exclusion"). Subsequent to the Cyberball game, participants were exposed to either the Facebook icon (to activate thoughts about Facebook) or the Flash Player icon (control group) in the lower left corner of the screen while completing questionnaires. Because an increased desire for social contact is a typical response to social exclusion (Maner et al., 2007; Williams, 2009), participants indicated their interest in a public activity with friends and in joining a new online social network at the university as dependent variables. As expected, participants exposed to the Flash Player icon showed an increased interest in social contact after exclusion as opposed to inclusion. By contrast, participants' responses in the Facebook condition did not differ significantly between the exclusion and inclusion condition. Activating thoughts about Facebook seemed to be sufficient to regain a sense of belonging. However, this pattern held only for participants who strongly believed that Facebook has relational value or, in other words, those who used Facebook primarily to maintain relationships and social contact with others.

In contrast to the subtle reminder of Facebook used by Knausenberger et al. (2015), Knowles, Haycock, and Shaikh (2015) investigated the moderating effect of actually using Facebook on restoring need satisfaction and aggressive behavior. In one study, social inclusion versus exclusion was manipulated by watching a human face that either looked at the participant or averted eye gaze by looking left or right (Wirth, Sacco, Hugenberg, & Williams, 2010). Participants were then asked to browse through either their photographs on Facebook or pictures of trees on the photo-sharing website Flickr prior to reporting their level of need satisfaction. As was to be expected, need satisfaction was lower following exclusion than inclusion. More important, however, this difference was much smaller when participants had viewed their photographs on Facebook as opposed to the control pictures on Flickr. In one further study, after being included versus excluded in Cyberball, participants were asked to spend a few minutes on Facebook or on a comics website. Aggressive behavior was then measured in the context of a computer game, in which participants were asked to select the volume of aversive white noise another participant would ostensibly be exposed to. Results revealed a tendency for "comic participants" to behave more aggressively following exclusion as compared with inclusion, whereas "Facebook participants" tended to be less aggressive after exclusion than inclusion. Thus, using Facebook following exclusion helped restore need satisfaction, thereby reducing aggressive tendencies often found in response to exclusion when affiliation opportunities are absent.

In addition to tangible or external representations of satisfying social bonds, such as photographs or the Facebook icon, there are intangible or internal representations of social bonds, such as memories and daydreams involving close others (Gardner et al., 2005). The effectiveness of intangible or internal representations of social bonds in regaining a sense of belonging was first tested by Twenge et al. (2007). In one study, participants in the exclusion condition received false feedback that they would live a life alone in the future (Twenge, Baumeister, Tice, & Stucke, 2001). The exclusion condition was compared with a negative outcome, nonsocial control condition in which participants were told that they were likely to be accident prone later in life (misfortune control condition). Immediately after the feedback, participants were asked to think of and write about their favorite family member, their favorite celebrity, or their most recent meal. Aggression was then measured with the noise-blasting game described above. Twenge et al. found that participants in the exclusion condition behaved more aggressively than participants in the misfortune control condition when they had written about their recent meal, but aggressive behavior did not differ significantly between conditions when participants had written about their favorite family member or their favorite celebrity. This finding suggests that thinking of both close others and favorite celebrities may help restore a sense of belonging following exclusion.[1]

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[1] Please note that in Twenge et al.'s (2007) study participants thought of their favorite celebrity and not just any likeable celebrity as in the study reported by Gardner et al. (2005; see above). However, also a bond with the favorite celebrity is usually only parasocial, that is, it is an illusion of a face-to-face relationship with a media figure (Horton & Wohl, 1956). This coping strategy is elaborated on in the section on social surrogates.

Twenge et al. (2007) replicated this finding in a second study, in which participants first learned that either all or none of the other participants wanted to work with them on a subsequent task (get-acquainted paradigm; Twenge et al., 2001) and then wrote about either their best friend or their journey to campus. Again, excluded participants behaved more aggressively than included participants when they had written about their journey to campus, but the extent of aggressive behavior did not differ significantly between conditions when participants had thought of their best friend.

Direct empirical evidence that thinking about one's best friend helps restore need satisfaction was provided by McConnell, Brown, Shoda, Stayton, and Martin (2011). In their study, McConell et al. asked participants to write about either a time when they felt excluded or rejected versus their experiences waking up on the day before the study (control condition). Next, participants wrote an essay about their best friend, their favorite pet, or drew a map of campus. Consistent with the findings of Twenge et al. (2007), excluded versus control participants reported a greater decrease in need satisfaction (between pre- and post-measurement) when the second task was to draw a map of campus. By contrast, when participants wrote about their best friend or their favorite pet, need satisfaction of excluded and control participants did not differ significantly. Interestingly, writing about one's favorite pet was as effective as writing about one's best friend in restoring basic needs satisfaction following social exclusion. One possible explanation for this finding is the greater inclination of excluded individuals to anthropomorphize pets, that is, to treat pets as humanlike and to ascribe humanlike traits related to social support to them (e.g., considerate, sympathetic; Epley, Akalis, Waytz, & Cacioppo, 2008). Extending these findings, Aydin et al. (2012) demonstrated that bringing a dog into the laboratory after participants had been excluded during the Cyberball game helped them restore feelings of acceptance and a satisfied level of self-esteem and meaningful existence.

Moreover, Knowles and Gardner (2008, Study 2) provided initial evidence that the automatic activation of highly meaningful and cohesive groups (vs. groups of lower meaning and cohesion) facilitates psychological recovery following exclusion. Specifically, excluded participants' self-esteem was greater, the more meaningful and cohesive the groups were they listed in response to the exclusion.

Finally, results of a study by Burson, Crocker, and Mischkowski (2012) suggested that not only reminders of specific social bonds, but also the affirmation of self-transcendent values, that is, values related to harmonious and supportive connections, may foster a sense of belonging. Specifically, Burson et al. manipulated intentional and unintentional exclusion by giving participants false feedback that either nobody wanted to work with them on a subsequent task or others wanted to work with them but, due to an odd number of participants, they were randomly chosen to work alone. Next, one-third of participants was asked to write about a self-transcendent value they had chosen from a list of six values as the most important one to them (e.g., empathy/compassion, being in mutually supportive/caring relationships, trust/openness, or being responsive to the needs of others and one's self); one-third of participants was asked to do the same with self-enhancement values (e.g., appearing intelligent, appearing confident, power/status, or physical attractiveness); and the last third of participants was asked to write about their daily routine (control condition). Given

that self-control is typically reduced following social exclusion (Baumeister, DeWall, Ciarocco, & Twenge, 2005), the resistance to the temptation to eat tasty but unhealthy food was measured as dependent variable by the number of cookies eaten in the context of a taste-rating task.

Replicating previous research on self-control, intentionally versus unintentionally excluded participants showed less self-control (i.e., ate more cookies) in the control condition. By contrast, when they had written about a self-transcendent or self-enhancement value, intentionally and unintentionally excluded participants did not differ significantly in the number of cookies eaten. Further, in line with the hypothesis that affirming a self-transcendent value fosters a sense of belonging, participants in the self-transcendent value condition reported feeling more connected, loving, and compassionate than participants in the self-enhancement value or control condition. It remains an open question, however, why also intentionally excluded participants in the self-enhancement value condition recovered faster from social exclusion than control participants, calling for further investigation. Hales, Wesselmann, and Williams (2016) extended the reported findings by showing that the affirmation of the value of social life and relationships following social exclusion facilitates recovery of basic needs satisfaction. Taken together, reminding oneself of one's social bonds with close others, favorite celebrities, pets, or meaningful, cohesive groups as well as activating social values seem to be effective strategies to facilitate recovery from the negative impact of social exclusion.

Social Surrogates

If representations of satisfying social bonds are unavailable, excluded individuals may use social surrogates to regain at least an illusion of belonging (Gardner et al., 2005). Social surrogates lead to an experience of belonging in the absence of relational reciprocity. More precisely, although social surrogates do not respond to the individual, they can still satisfy the need to belong because they foster an illusion of feeling connected. The social surrogates discussed in the following are parasocial attachments with favorite television characters, comfort food, and nature connectedness. The function of God as a social surrogate is discussed in the section about religion.

Parasocial Attachments

The American Time Use Survey (Bureau of Labor Statistics, 2015) revealed that, in 2014, people in the USA age 15 and over spent, on average, more than half of their leisure time (53%) watching television. By way of comparison, they spent, on average, only 12% of their leisure time socializing and communicating (e.g., visiting with friends or attending social events). People seem to create parasocial attachments, that is, the illusion of face-to-face relationships with media figures (Horton & Wohl, 1956), especially with their favorite television characters. Moreover,

research has shown that the strength of parasocial attachments is positively associated with the dispositional need to belong (Knowles, 2007), but unrelated to feelings of loneliness (McCourt & Fitzpatrick, 2001; Rubin, Perse, & Powell, 1985). Twenge et al. (2007) were the first to test the hypothesis that parasocial attachments with media figures help regain a sense of belonging following social exclusion. As reported above, writing about one's favorite celebrity was as effective as writing about one's favorite family member in preventing individuals from aggressive responses to social exclusion.

Knowles (2013) reported a series of studies extending this finding. In three studies, feelings of exclusion were induced by asking participants to recall a time when they felt excluded or rejected and compared with three control conditions, in which feelings of acceptance, failure, or neutral feelings were induced. Subsequently, participants were asked to write about either their favorite television character or a nonsocial control construct (favorite hobby or favorite travel destination). Consistent with previous research, participants who had written about a control construct reported lower self-esteem and greater negative mood and solved less math problems following exclusion as compared with the respective control condition. However, self-esteem, mood, and number of solved math problems did not differ significantly between excluded and control participants when they had written about their favorite television character. One of these studies also showed that writing about a favorite television character helped excluded participants regain feelings of belonging and that these feelings of belonging accounted for the effect of the writing task on excluded participants' mood. Knowles reported one further study in which social exclusion versus inclusion was manipulated via Cyberball prior to exposing participants to images of either their own or another participant's favorite television character. Participants who saw images of another participant's favorite television character described their in-groups as significantly more meaningful and cohesive than their out-groups following exclusion versus inclusion. By contrast, participants reminded of their own favorite television character described both groups comparably meaningful and cohesive irrespective of whether they had been excluded or included. Presumably, these participants no longer needed to utilize self-protective cognitions (i.e., in-group favoritism) to bolster their sense of belonging because their favorite television character had already helped them recover.

Derrick, Gabriel, and Hugenberg (2009) demonstrated that participants faced with a belongingness threat (i.e., those who recalled a fight with a close other) wrote significantly longer and more words about their favored television program than control participants who had listed objects in their residence. By contrast, threatened and control participants did not differ significantly in the time spent and the number of words when they wrote about watching TV in general. Moreover, most essays described a social program (e.g., sitcoms or dramas) irrespective of whether the program was favored or not. These results indicate that individuals rely on the parasocial attachments provided by their favorite television program, rather than relying on any media figure, to cope with threats to their sense of belonging. In a further study, Derrick et al. employed the same tasks but held the

time constant that participants spent on writing about a favorite television program versus whatever was on television. Results showed that threatened participants reported lower self-esteem and greater negative affect than control participants when they were reminded of any television program. However, in accord with the findings reported by Knowles (2013), threatened and control participants' self-esteem and negative affect did not differ significantly when they were reminded of their favorite television program. Altogether, relying on parasocial attachments with favorite television characters seems to facilitate recovery after having been faced with a social threat.

Comfort Food

Social surrogates do not necessarily have to be human, as findings on comfort food illustrate. The term comfort food refers to all kinds of food whose intake is subjectively experienced as satisfying. Thus, individuals differ in their preferences for comfort foods. Moreover, comfort food is often eaten to alleviate negative affective states (e.g., Dube, LeBel, & Lu, 2005; Evers, Stok, & de Ridder, 2010). Multiple reasons are conceivable why a specific food is experienced as comfort food. One reason proposed by Troisi and Gabriel (2011) is especially relevant with regard to the assumption that comfort food can serve as a social surrogate. According to Troisi and Gabriel, comfort foods are food items that were often initially eaten in the presence of close others. They further postulated that the perceptual experience of eating these food items was therefore encoded along with the abstract concept of social comfort. As a result, eating these food items, or even thinking about eating them, is assumed to automatically activate the associated concept, which enables individuals to reexperience the social comfort that was initially encoded along with the food items.

As hypothesized, Troisi and Gabriel (2011) found that eating comfort food activates the concept of social comfort, which was measured by the number of completed words related to good relationships (e.g., like, include) in a word-completion task. Moreover, Troisi and Gabriel asked participants to either write about a fight with a close other (inducing a threat to one's belonging) or list items in their residence (control condition) and then to write about the experience of either eating a comfort food or trying new food. Participants who recalled a fight with a close other reported significantly less feelings of disconnection when they had written about comfort food as compared with new food. This finding, however, was limited to participants with a secure attachment style, that is, those who experience social comfort in the presence of relationship partners to a great degree and therefore are more likely to associate comfort food with social comfort. The feelings of participants with an insecure attachment style and participants in the control condition were not influenced by writing about comfort or new food. Considered together, eating comfort food helps alleviate feelings of social disconnection following a social threat, given that the individual has strongly positive cognitive associations with relationships as it applies to securely attached individuals.

Nature Connectedness

Nature connectedness, that is, an "individual's experiential sense of oneness with the natural world" (Mayer & Frantz, 2004, p. 504), seems to be another promising social surrogate candidate. A body of research has shown that emotional, physiological, and attentional restoration is enhanced in natural environments (e.g., Hartig, Evans, Jamner, Davis, & Gärling, 2003; Ulrich et al., 1991). Moreover, nature connectedness has been found to be positively associated with ratings of psychological well-being (e.g., ratings of self-acceptance, purpose in life, and environmental mastery) and social well-being (e.g., ratings of social acceptance, social actualization, and social integration; Howell, Dopko, Passmore, & Buro, 2011; Howell, Passmore, & Buro, 2013). Given that nature connectedness increases psychological and social well-being, one may expect that socially excluded individuals seek nature connectedness.

Poon, Teng, Chow, and Chen (2015) provided first empirical evidence that social exclusion increases the desire for nature connectedness. In two studies, Poon et al. manipulated social exclusion versus inclusion or a negative, nonsocial experience by means of an imagined scenario or the recall of a past experience of social exclusion versus physical pain. Nature connectedness was measured by asking participants how likely they were to engage in nature-related activities (e.g., lying on grassland, planting flowers) or the connectedness to nature scale (e.g., "I want to feel a sense of oneness with the natural environment around me;" Mayer & Frantz, 2004). Across both studies, Poon et al. found that social exclusion resulted in a greater desire to connect to nature as compared with social inclusion or the negative, nonsocial control condition. Moreover, socially excluded participants indicated a greater willingness to engage in sustainable behavior (e.g., recycling, taking shorter showers) than control participants, and their increased desire to connect to nature accounted for this effect. Thus, in addition to serving as a social surrogate, nature connectedness may help individuals cope with social exclusion by promoting behavior that fosters social acceptance.

Religion

A recent poll of 63,898 people from 65 countries across the globe conducted by WIN/Gallup International (2015) revealed that 63 % of people say they are religious. Wesselmann and Williams (2010) suggested that having to cope with social exclusion is one reason that motivates people to turn to religion because religion has the potential to fulfill the four basic needs threatened by social exclusion. First, religion can fulfill the need for belonging by reminding people of their relationships with other members of their religious community, thereby fostering a sense of social identity and increasing confidence in having an opportunity for frequent and personal social contact. Moreover, incorporeal beings, such as angels, spirits, and God in particular, can serve the function of a social surrogate (Kirkpatrick, 1998). Second,

religion can fulfill the need for self-esteem by reminding people of an all-loving God and the uniqueness ascribed to each individual. Third, religion can fulfill the need for control by reminding people of the belief that personal outcomes (including the circumstances of afterlife) are influenced by the extent to which an individual's behavior and choices comply with prescribed rules of the respective religious community. In addition, religious people believe that they are able to exert influence by including requests from God in their prayers. Correspondingly, prayer is associated with greater self-control (DeWall et al., 2014; Friese & Wänke, 2014). Fourth, religion can fulfill the need for meaningful existence by offering an answer to the question about the meaning of life. Kashdan and Nezlek (2012) showed that present daily spirituality predicts next day's meaning in life. Also, people's religious beliefs have been found to be stronger when they are coping with existential anxiety (Norenzayan & Hansen, 2006). In conclusion, religion has the potential to restore the basic needs threatened by social exclusion.

In accord with Wesselmann and Williams' (2010) assumptions, research has demonstrated that social exclusion (vs. inclusion or a control condition) results in greater self-reported religiosity, greater intention to show private religious behavior (e.g., practicing private religious rituals, praying for oneself, and talking to God), and a stronger belief in the existence of supernatural agents or associated forces (e.g., God, angels, the Devil, ghosts, miracles, and curses; Aydin, Fischer, & Frey, 2010; Epley et al., 2008). Likewise, Laurin, Schumann, and Holmes (2014) found that inducing relationship concerns results in greater self-reported closeness to God, greater willingness to respond constructively to God's hurtful behavior, and greater interest in a God exercise which includes having a private conversation with God. However, in two out of three studies, the effects were limited to individuals high in self-esteem (i.e., those who expect to be socially accepted by others to a great degree). The reported findings suggest that socially excluded individuals turn to religion to cope with threatened needs. But is this coping strategy effective?

In one study of Aydin et al. (2010, Study 5), participants were asked to write about their attitude toward either religiousness and faith or environment protection after a scenario-based manipulation of social exclusion versus inclusion. Aggression was measured by asking participants to determine the duration another participant would have to keep his or her hand in ice water (although no participant had to do this task in fact). Participants who had been reminded of environment protection responded more aggressively to exclusion than inclusion. By contrast, included and excluded participants who had been reminded of religiousness did not differ significantly in their aggression, supporting the assumption that religion can contribute to restoring need satisfaction.

Furthermore, Hales et al. (2016, Study 3) investigated the effects of prayer, affirmation of the value of social life and relationships, and distraction on recovery from social exclusion. All participants were excluded during the Cyberball game prior to completing one of the following tasks: (1) saying a prayer to oneself and writing down the content of the prayer, (2) thinking and writing about why social life and relationships are important to oneself, (3) describing in detail the last meal one ate (distraction task), or (4) writing about one's momentary thoughts (control condition).

Need satisfaction as well as positive and negative affect were measured twice: once directly after the Cyberball game and once after the intervention. All three interventions resulted in greater recovery of basic needs satisfaction as compared with the control condition. Moreover, the three interventions did not differ significantly in the amount of recovery. However, the mechanisms through which they influenced recovery seemed to differ. Reductions in rumination about the exclusionary event accounted only (in part) for recovery in the distraction condition. As previously described, one may assume that social affirmation serves as a reminder of social connectedness and prayer—as a way to practice one's religion—reminds people of their religious community and connection to God, and provides them a sense of uniqueness, self-control, and meaning in life. Finally, Hales et al. found that saying a prayer resulted in greater recovery for people with high as opposed to low religious commitment to God. Thus, turning to religion seems to be an effective strategy to cope with the negative consequences of social exclusion but more so for believers than nonbelievers.

Strategies to Buffer the Reflexive Responses to Social Exclusion

To date, very few strategies have been identified that mitigate the strong, immediate negative impact of social exclusion on the basic needs and affect, jointly referred to as *reflexive responses* to social exclusion. The coping strategies discussed in the first part of this chapter are utilized after an exclusionary event to facilitate psychological recovery. By contrast, strategies to buffer reflexive responses to social exclusion have to be utilized prior to or at the onset of an exclusionary event. We therefore postulate that strategies helping build up strong psychological resources, such as belonging, self-esteem, control, and meaningful existence, may prove to be effective buffers against the reflexive responses to social exclusion. We henceforth refer to this account as the psychological resource hypothesis and review supporting evidence that investigated the role of social companionship, belonging to a majority, money, and powerful positions.

Social Companionship

According to the old saying "Misery loves company," one may assume that sharing the negative experience of social exclusion with another person reduces its impact on the excluded individual's psychological well-being. But do all kinds of company (e.g., stranger, close other) serve this purpose? In two studies, van Beest, Carter-Sowell, van Dijk, and Williams (2012) found that both participants who were in the company of a stranger while they played Cyberball and participants who played the game alone reported lower levels of need satisfaction following exclusion as compared with inclusion. Thus, it seems that strangers do not provide the psychological resources that help defend the individual's basic needs against social exclusion.

By contrast, the company of a close other should have the potential to boost one's sense of belonging, self-esteem, control, and meaningfulness. However, it is likely that the benefit of being in the company of a close other is limited to people with high trait self-esteem. The sociometer theory (Leary & Baumeister, 2000; Leary, Tambor, Terdal, & Downs, 1995) postulates that the self-esteem system mirrors one's standing with others. More precisely, the level of trait self-esteem reflects the extent to which the individual generally perceives others to regard their relationship as close, valuable, and important. Correspondingly, people with high trait self-esteem should feel close to others, they should feel valued and supported by others, thereby increasing their perceived ability to exert influence on their social environment, and they should feel important. By contrast, people with low trait self-esteem should feel neither very close to others nor valued and important, which results in a tendency to expect exclusion by others (Leary & Baumeister, 2000; Leary et al., 1995). Therefore, close others, such as friends and partners, are unlikely to boost the sense of belonging, self-esteem, control, and meaningfulness in individuals with low trait self-esteem. In accord with this, individuals with high trait self-esteem have been found to show an increased desire for social contact with close others when experiencing a threat in a domain of high versus low relevance to their self-worth, whereas individuals with low trait self-esteem showed a decreased desire (Park & Maner, 2009).

Teng and Chen (2012) empirically tested the moderating effect of different kinds of company (stranger vs. close other) on the relationship between social exclusion and need satisfaction of individuals high or low in trait self-esteem. Replicating the findings of van Beest et al. (2012), they found that participants who were in the company of a stranger while they played Cyberball reported lower levels of need satisfaction following exclusion as compared with inclusion irrespective of their level of trait self-esteem. However, participants' level of need satisfaction did not differ significantly between the exclusion and inclusion condition when they were in the company of a close other and had high (vs. low) trait self-esteem. Thus, not companionship in general but having a close other at one's side during an exclusionary event can buffer social exclusion's immediate impact on the basic needs given that the excluded individual has high trait self-esteem.

Research on strategies to cope with the negative consequences of social exclusion has revealed that reminders of a social bond with a significant other following social exclusion help recover basic needs satisfaction irrespective of trait self-esteem (McConnell et al., 2011; Twenge et al., 2007). If a social bond is merely remembered, people with low trait self-esteem do not have to worry about being excluded by their significant other. Building on these research findings, one may expect that thinking of a significant other prior to or at the onset of an exclusionary episode bolsters one's sense of belonging, thereby reducing the susceptibility to threats from social exclusion. Our findings from two recent studies (Eck, Schoel, & Greifeneder, 2016a), however, challenge this supposition.

In a first study, we investigated whether people who are in a relationship would differ from single persons in their immediate, reflexive responses to social exclusion as a function of relationship status activation. In all conditions, need satisfaction was lower following exclusion as compared with inclusion during the Cyberball game. However, excluded participants who thought about their relationships prior to the Cyberball

game reported significantly less need satisfaction than excluded participants who thought about their life as single persons and excluded control participants (i.e., those who indicated their relationship status at the end of the study). These results suggest that reminders of one's relationship prior to being excluded enhance susceptibility to threats from social exclusion. To further substantiate these findings, in a second study, we directly tested the effects of the concepts activated by the respective relationship status, namely feeling connected to another person (activated in people in a relationship) and feeling independent from others or alone (activated in single persons). Replicating the findings of the first study, excluded participants who felt connected to another person reported significantly less need satisfaction than excluded participants who felt independent from others. Moreover, need satisfaction of excluded participants who felt alone fell in between these two conditions.

Taken together, the results of these two studies suggest that a reminder of a social bond (vs. a reminder of one's independence or a control condition without reminder) prior to the exclusionary event even lowers need satisfaction to a greater extent. Presumably, being reminded of one significant social connection (or a lack of social connections as it applies to people feeling alone) may highlight the importance of belonging for well-being, which, in turn, intensifies the need threat that is experienced in response to social exclusion.

Interestingly, Hermann, Skulborstad, and Wirth (2014) found that thinking of a person who unconditionally accepts one helps buffer the immediate effect of social exclusion on the basic needs to some extent for securely attached people. Specifically, in their study, participants were asked to write either about a person who clearly and unconditionally accepts them (unconditional acceptance condition) or about a coworker or classmate whom they did not know well (control condition) prior to playing Cyberball. In both essay conditions, excluded participants reported significantly less need satisfaction than included participants. However, need satisfaction of excluded participants was significantly greater in the unconditional acceptance condition as compared with the control condition when they had a secure attachment style. Nevertheless, participants reported that it was relatively difficult for them to identify a person who unconditionally accepts them.

Considered together, being in the company of a close other, but not a stranger, helps reduce reflexive responses to social exclusion only if the excluded individual has high trait self-esteem. By contrast, merely being reminded of a social bond with a close other does not buffer social exclusion effects on basic needs but even reinforce them. However, basic needs of securely attached individuals can be defended against the impact of social exclusion to some extent by thinking in particular of a social bond in which they feel unconditionally accepted.

Belonging to a Majority

Social contexts are characterized by groups holding the majority or minority position toward each other (Sachdev & Bourhis, 1991). More often than not, belonging to the majority group is perceived as good whereas belonging to the minority group

is perceived as bad (Moscovici, 1980). As group memberships are part of one's social identity, the status of a group as a majority or minority influences their members' thoughts, feelings, and behaviors to a great extent. It therefore seems reasonable to assume that perceiving oneself as a member of a majority group may help build up psychological resources to buffer the negative impact of social exclusion on the basic needs. More precisely, majority groups provide the opportunity to feel connected to many people, can contribute to a high self-esteem of their members due to the positive attributes associated with majorities (Kruglanski & Mackie, 1990; Moscovici, 1980; Sachdev & Bourhis, 1984, 1991), and give members a feeling of being in control over their social environment as well as being recognized as existing because of the high power ascribed to majorities (Keltner, Gruenfeld, & Anderson, 2003; Lücken & Simon, 2005).

The moderating effect of group membership, however, is more likely to occur among individuals with a generally strong desire for acceptance and belonging (i.e., those with a high dispositional need to belong). Individuals with a high (vs. low) dispositional need to belong place greater importance on their social identity, including their interpersonal relationships and social groups (Leary, Kelly, Cottrell, & Schreindorfer, 2013). We therefore tested in two studies whether perceiving oneself as a member of a majority group reduces the immediate effect of social exclusion on the basic needs according to one's dispositional need to belong (Eck, Schoel, & Greifeneder, 2016b).

In the first study, group membership (majority vs. minority vs. unknown group size) was manipulated via feedback on a perception task prior to experiencing social inclusion versus exclusion in a scenario. Supporting our hypothesis, participants high in the need to belong who belonged to the minority group or the group of unknown size showed less need satisfaction following exclusion as compared with inclusion. Basic needs satisfaction of participants high in the need to belong, however, did not differ significantly between the inclusion and exclusion condition when they belonged to the majority group. Unexpectedly, participants low in the need to belong showed no social exclusion effect in all three group conditions. Presumably, inducing social exclusion by a scenario was not sufficiently strong to affect individuals with a relatively weak desire for acceptance and belonging.

In a second study, we used the same procedure as in the first study but manipulated social inclusion versus exclusion using Cyberball and replaced the minority group with a control condition, in which participants received no feedback on the perception task (no group condition). Again, basic needs satisfaction of participants high in the need to belong was lower following exclusion as compared with inclusion in the unknown group size and no group condition but not in the majority group condition. By contrast, participants low in the need to belong showed a social exclusion effect irrespective of group membership. The comparison of the unknown group size and majority group conditions with the no group condition substantiates the assumption that not just any group but majority groups in particular possess the potential to provide their members with the necessary psychological resources to mitigate the impact of social exclusion given that individuals have a high dispositional need to belong.

Money

To survive, people have to afford means to meet their physiological needs (e.g., water, food) and their need for security (e.g., a dwelling place). Moreover, having money allows materialistic consumption that may serve to fulfill further basic needs. In line with this, researchers have argued that money or just the mere thought of having money boosts feelings of strength, efficacy, and confidence with regard to one's ability to maintain need satisfaction, and enhances feelings of self-sufficiency (Vohs, Mead, & Goode, 2006; Zhou & Gao, 2008; Zhou, Vohs, & Baumeister, 2009). More precisely, researchers have suggested that people rely on materialistic consumption to counter peer rejection (Banerjee & Dittmar, 2008), to deal with doubts about their competence and self-worth (Chang & Arkin, 2002), to compensate for a lack of control (Christopher, Saliba, & Deadmarsh, 2009), and to establish meaning in life when confronted with death anxiety (Arndt, Solomon, Kasser, & Sheldon, 2004). Thus, materialistic consumption can be expected to foster a sense of belonging, self-esteem, control, and meaningfulness. However, in modern times people need money to be able to invest in material goods. Therefore, one may argue that money helps maintain need satisfaction by enabling materialistic consumption. Further, as maintaining need satisfaction via materialistic consumption is not reliant on others, people having money are likely to feel self-sufficient and especially strong, efficient, and confident with regard to their ability to meet their needs.

Initial evidence for the assumption that activating the concept of money buffers the effects of social exclusion was provided by Zhou et al. (2009). Before playing Cyberball, participants were asked to count out either 80 $100 bills (activating the money concept) or 80 pieces of paper. As expected, excluded participants who counted money as opposed to paper reported higher self-esteem and feelings of strength. By contrast, counting money versus paper had no significant effect on the self-esteem and feelings of strength of included participants. Moreover, feelings of strength and self-esteem were positively associated. In another study, participants were asked to either list their monetary expenditures for the past 30 days or write about the weather condition over the past 30 days prior to playing Cyberball. Zhou et al. found that reflecting on money loss as opposed to the weather reduced self-esteem in both the exclusion and inclusion condition, but the decrease in self-esteem was significantly larger following exclusion. Participants who reflected on money loss also reported feeling less strong than those who reflected on the weather, and feelings of strength and self-esteem were again positively related. Thus, thinking of having money, but not thinking of money loss, increases feelings of strength and buffers against the decrease in self-esteem when being excluded.

Lelieveld, Moor, Crone, Karremans, and van Beest (2013) investigated the buffering effect of money on all four basic needs. In three studies, all participants played Cyberball but half of them were financially compensated for being excluded by receiving 50 Euro cent for each ball that was not thrown to them. Across all studies, participants reported lower need satisfaction following exclusion as compared with inclusion, but excluded participants who were financially compensated reported

higher need satisfaction than excluded participants who were not compensated. These findings underpin the hypothesis that money has the potential to buffer the threat social exclusion poses to the basic needs.

Powerful Positions

Power is a central force in social relationships (Galinsky, Rus, & Lammers, 2011). Powerful positions are characterized by the capacity to exert influence on others through having control over resources (Keltner et al., 2003). Accordingly, being in a powerful position is quite likely to boost one's sense of control. Power holder's sense of control may even be so strong that they perceive illusory control over random outcomes (Fast, Gruenfeld, Sivanathan, & Galinsky, 2009). Moreover, powerful positions are often linked with greater positive affect (e.g., Anderson & Berdahl, 2002; Berdahl & Martorana, 2006; Langner & Keltner, 2008), which may counteract the increase of negative affect following social exclusion. Finally, being in a powerful position may boost one's sense of self-esteem. However, the link between powerful positions and higher self-esteem seems to be indirect via perceived control and affect (Fast et al., 2009; Wojciszke & Struzynska-Kujalowicz, 2007).

Kuehn, Chen, and Gordon (2015) examined the moderating effect of social power on negative emotions and self-esteem. They conducted a 2-week diary study to investigate the relationship between relative power in a romantic relationship and negative emotions felt in response to perceived partner hostility as a proxy of rejection. The study results showed that on days on which participants perceived their partners as accepting, power was not associated with negative emotions. By contrast, on days on which participants perceived their partners as rejecting, higher power was associated with less negative emotions.

In a second study, Kuehn et al. (2015) induced high versus low power experimentally by assigning participants to the role of a boss versus employee in a task on solving brainteasers. All materials from the partner ostensibly assigned to the other role were prepared in advance. Social rejection versus acceptance was then manipulated by asking participants to complete a questionnaire about themselves that ostensibly served to exchange information between participants, and to indicate on a scale how much they wanted to work with the other participant on a task due to the exchanged information. Subsequently, they received false feedback by the other participant that was either mildly rejecting (i.e., the mean rating was slightly below the scale midpoint) or mildly accepting (i.e., the mean rating was slightly above the scale midpoint). As expected, participants in a low-power role reported more negative emotions and lower self-esteem when they were rejected as opposed to accepted, whereas negative emotions and self-esteem of participants in a high-power role did not differ significantly between the rejection and acceptance feedback.

To further substantiate these findings, in their last study, Kuehn et al. (2015) included a control condition in which the participant and the rejector had equal power. To this end, participants were asked to imagine that they held either a high-power or

low-power position at a company. They were further asked to imagine that they were not invited to a post-work happy hour they typically enjoyed going to. Finally, they were told that the coworker who planned the happy hour (i.e., the rejector) held either a high-power or low-power position. Supporting the assumption that a powerful position may attenuate the effect of social exclusion on self-esteem, participants in the high-power position reported higher self-esteem than both those in the low-power position and those in the equal-power condition, who did not differ significantly from each other in their level of self-esteem.

We manipulated power in a more subtle way utilizing Cyberball (Schoel, Eck, & Greifeneder, 2014). In the standard Cyberball paradigm, the characters representing the two other (preprogrammed) players are positioned on top of an upside-down triangle, whereas the character representing the participant is positioned at the bottom. This spatial arrangement is reasonable because people perceive things positioned lower in their visual field as closer than things positioned higher; and they typically visualize themselves in close spatial proximity, whereas others are visualized as farther away (Goldstein, 2007). However, the position of the characters is not just vertically higher versus lower but also psychologically. People often use the spatial dimension to express powerful versus powerless positions. Specifically, people associate things at the top with high power and things at the bottom with low power (for empirical evidence, see, e.g., Giessner & Schubert, 2007; Schoel, Zimmer, & Stahlberg, 2015; Schubert, 2005). Following this line of thought, we flipped the standard Cyberball arrangement vertically, so that the character depicting the participant was positioned above the characters depicting the two supposed other players, and compared it with the standard arrangement. In addition to affect and all four basic needs, we measured aggression toward the other players to show that buffering the impact of social exclusion on affect and the need for control reduces aggressive acts of retaliation. Based on the hot sauce allocation task (Lieberman, Solomon, Greenberg, & McGregor, 1999; see also Warburton, Williams, & Cairns, 2006), aggression was measured by asking participants to imagine ordering lunch for the people involved in the Cyberball game and to choose how spicy they would order the meals. As the others were described as not tolerating very spicy meals, choosing more spicy meals indicated a stronger intention to harm others.

In line with our hypotheses, the impact of exclusion (vs. inclusion) on affect and the need for control was greater for participants positioned below the other players (i.e., in a powerless position) as compared with those positioned above (i.e., in a powerful position). Moreover, we found that participants in a powerless position behaved more aggressively following exclusion as opposed to inclusion, whereas the aggressive behavior of participants in a powerful position did not differ significantly between the exclusion and inclusion condition. Finally, the reduced aggression of participants in a powerful position toward the excluding players could in part be attributed to their lower level of negative affect and higher level of perceived control as compared with participants in a powerless position. Please note that these findings do not challenge the standard Cyberball paradigm as being "below" and being excluded likely accompany each other more often than not. Not to mention

the fact that research findings based on Cyberball closely resemble those based on other social exclusion paradigms. However, investigations of power should take into account that power is confounded with spatial position.

To summarize the empirical evidence on the buffering effect of power, being or visualizing oneself in a powerful position may reduce the effect of exclusion on the need for self-esteem and control as well as on affect. It thereby also helps prevent aggressive acts of retaliation against the perpetrators of the exclusion episode.

Discussion

The research reviewed in this chapter focused on responses to short-term social exclusion. If individuals are excluded for prolonged periods of time, in which they continuously fail to restore need satisfaction or to end the exclusion, it is likely that they will enter a stage of resignation. Individuals in the resignation stage likely resign themselves to their low need satisfaction, which may cause feelings of alienation, depression, helplessness, and unworthiness (Williams, 2007, 2009). Although this is speculative, it is reasonable to assume that the reviewed coping strategies can help delay entering the resignation stage and thereby increase the chance of finding new affiliation opportunities, which, in turn, protect the individual from resignation. Presumably, the coping strategies may also help individuals in the resignation stage to feel temporarily better. However, because of the importance of social relationships for health and well-being (Baumeister & Leary, 1995), the only effective way to end the resignation stage seems to be actual social reinclusion.

With regard to buffering strategies, one may argue that buffering the reflexive responses to social exclusion reduces the individual's chance to recognize situations that require behavioral changes to regain social acceptance. Again, it is important to note that the discussed buffering strategies have been found to attenuate reflexive responses to short-term social exclusion. It is quite likely that the built up psychological resources become gradually depleted when the individual is exposed to prolonged exclusion episodes. Thus, the buffering strategies help prevent decreases in need satisfaction when social exclusion is unintended and meaningless (e.g., when your coworkers did not ask you for joining them for lunch because they thought you were out of office), but do not shut down the individual's ability to detect prolonged, meaningful social exclusion (e.g., when friends do not inform you about group activities repeatedly because they do not want you to join them).

Conclusion

In this chapter, we give an overview of research on strategies that help cope with or buffer against the negative psychological consequences of social exclusion. Coping strategies are utilized after the individual has shown reflexive responses to social

exclusion (e.g., need threat, negative affect) and aim at facilitating psychological recovery. Specifically, coping strategies help prevent maladaptive reflective responses to social exclusion such as social withdrawal and aggression by helping restore basic needs satisfaction and improve mood. As social withdrawal and aggression are more likely to occur in response to social exclusion when no affiliation opportunity is available or the prospect of social acceptance is low, we focused on coping strategies that can be utilized in such situations, namely reminders of social bonds, social surrogates, and turning to religion.

In contrast to coping strategies, buffering strategies are utilized prior to or at the onset of an exclusionary episode and are intended to mitigate or prevent the reflexive responses to social exclusion. Until recently, research findings suggested that reflexive responses to social exclusion are resistant to change. In this chapter, however, we provide evidence for our psychological resource hypothesis that building up strong psychological resources, such as belonging, self-esteem, control, and meaningfulness, prior to or at the onset of an exclusionary episode has a buffering effect. The buffering strategies discussed in this chapter were social companionship during the exclusionary event, belonging to a majority, thinking about money, and visualizing oneself in a powerful position. Taken together, the psychological resource hypothesis seems to be a promising approach for future research to further fill the gap of effective buffering strategies.

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Brain Mechanisms to Regulate Negative Reactions to Social Exclusion

David Chester and Paolo Riva

By using the brain as the level-of-analysis, scientists have gained great insight into how exclusion affects people and how they cope with this aversive experience. In this chapter, we briefly summarize the research on exclusion's various negative consequences and their neural substrates. We then draw from multiple literatures on self-regulation to suggest ways in which neuroscience can help reveal and facilitate functional regulatory reactions to exclusion. In doing so, we hope to leverage the recently accumulated knowledge about the neuroscience of exclusion to move beyond descriptive research and to propose empirically supported avenues for future research and intervention targeted at improving peoples' ability to cope with exclusion.

The Social Brain and the Threat of Exclusion

The human brain is a socially tuned organ (Adolphs, 2009; Dunbar & Shultz, 2007; Frith & Frith, 2010; Lieberman, 2007). For example, when at rest, the brain's pattern of activity looks nearly identical as to when one is thinking about others (Mars et al., 2012). As one might expect from the brain's interpersonal attunement, social threats register strongly in the nervous system. Principal among these is the threat of social exclusion (Eisenberger, 2012). Because of the human need for social connection, exclusion serves as one of the greatest dangers for survival and reproduction (MacDonald & Leary, 2005). As evidence of

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this, people respond to exclusion with extreme alterations in affect, cognition, and behavior. Some of these responses serve the positive function of social reconnection, such as attunement to sources of inclusion (Bernstein, Young, Brown, Sacco, & Claypool, 2008) and ingratiating oneself to potential new connections (Maner, DeWall, Baumeister, & Schaller, 2007). However, many responses to exclusion are dysfunctional, such as greater aggression (Twenge, Baumeister, Tice, & Stucke, 2001), less prosociality (Twenge, Baumeister, DeWall, Ciarocco, & Michael, 2007), self-control failure (Baumeister, DeWall, Ciarocco, & Twenge, 2005), stress reactivity (Blackhart, Eckel, & Tice, 2007), and inflammation (Slavich, Way, Eisenberger, & Taylor, 2010). These myriad impairments underscore the deeply threatening nature of social exclusion and are mediated by changes in brain function.

The understanding we now have regarding exclusion's deleterious effects has been substantially aided by the enterprise of neuroscience. This boon in knowledge has arisen due to the many advantages of neuroimaging. As an example, neuroimaging allows for the detection of multiple, simultaneously occurring psychological processes and the quantification of the dynamic interactions between them (Lieberman, 2010). Further, neuroimaging can be seen as a complementary approach to conventional self-report methods, as it can bypass certain introspective biases inherent in human psychology. It has now been well over a decade since the earliest examinations of the neural underpinnings of self-control and the literature is well placed to leverage the methodological advantages of neuroimaging to begin to suggest ways in which responses to social exclusion's negative consequences can be modified to promote positive outcomes and successful coping.

The Neuroscience of Exclusion: Automatic and Controlled Components

As with most discussions of psychological responses to social situations, a dual-process approach is helpful to understand the dynamic nature of psychological reactions to social exclusion (Chaiken & Trope, 1999). According to a dual process approach, there are automatic (i.e., fast, ungoverned) and controlled (i.e., slower, restraining) mechanisms that arise and interact with one another to achieve self-regulatory goals. The proposed existence of automatic and controlled components to the brain's response to social stimuli has been met with a wealth of supporting evidence (Heatherton & Wagner, 2011; Lieberman, 2007; Satpute & Lieberman, 2006; Spunt & Lieberman, 2013; Todorov, Harris, & Fiske, 2006). We thus discuss the neural correlates of social exclusion in relation to their automatic or controlled natures (Fig. 1).
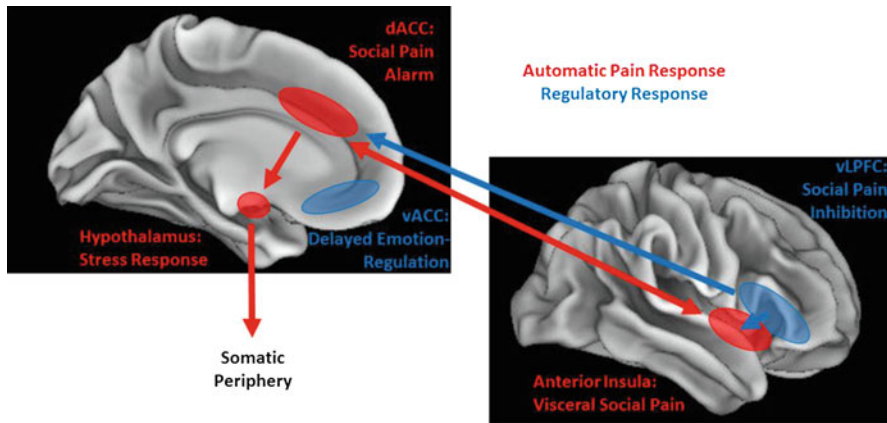
Fig. 1 Schematic of brain mechanisms that support the automatic social pain response (in *red*) or the regulation thereof (in *blue*)

The Automatic Response to Social Pain

To date, one of the chief contributions of neuroscience to the understanding of exclusion is that it is truly, and automatically, a painful experience (Eisenberger, 2015; for an alternative view on this issue see chapter "Research in Social Neuroscience: How Perceived Social Isolation, Ostracism, and Romantic Rejection Affect Our Brain"). The first inklings that pain was a crucial component of exclusionary experiences arose from neuroscientific research on physical pain in nonhuman animals. When bird chicks had been administered exogenous opioids, they showed substantial decreases in the frequency and intensity of distress vocalizations that arose in response to social isolation (Panksepp, Vilberg, Bean, Coy, & Kastin, 1978). Ablation and stimulation of chicks' periaqueductal gray (PAG), a brainstem region implicated in the primitive experience of physical pain, reduced and increased such distress vocalizations, respectively (Panksepp, 2011). These manipulations of the physical pain system were the first to suggest that exclusion is truly a painful experience.

The PAG is part of a larger pain matrix that extends throughout the neocortex. Indeed, the brain has a detailed and well-investigated pain matrix that physical pain researchers delineated over decades. This pain matrix shows a roughly dichotomous subdivision in which certain brain regions process the somatic, physical sensation of pain (i.e., posterior insula, somatosensory cortices) whereas others subserve the affective, distressing component of pain (i.e., anterior insula, dorsal anterior cingulate cortex; Eisenberger, 2012; Rainville, Duncan, Price, Carrier, & Bushnell, 1997; Schnitzler & Ploner, 2000). A seminal study that largely birthed the concept of *social pain* discovered that an instance of social exclusion, taking the form of an unreciprocated ball-toss, was associated with activity in the brain's pain matrix (Eisenberger, Lieberman, & Williams, 2003). Specifically, the study observed activity in the dorsal anterior cingulate cortex (dACC) and the anterior insula, regions commonly associated with the

affective experience of physical pain. Many subsequent studies have directly replicated these findings (e.g., Chester et al., 2014; DeWall et al., 2010; Kawamoto et al., 2012; for meta-analytic evidence see Eisenberger, 2015; Rotge et al., 2015).

Instances of exclusion can even recruit the somatic subdivision of the pain matrix, suggesting that social pain can be a truly physical and visceral experience (Kross, Berman, Mischel, Smith, & Wager, 2011). Much as physical injuries automatically activate the body's endogenous opioid system, which serves to reduce the experience of pain, exclusion also activates this internal analgesic (Hsu et al., 2013, 2015). Physical pain-reducing substances such as acetaminophen and marijuana have also been shown to reduce the pain of exclusion (Deckman, DeWall, Way, Gilman, & Richman, 2013; DeWall et al., 2010). Individuals who are incapable of experiencing physical pain exhibit severe dysfunction in their lives as they continuously accrue physical injuries which greatly shorten their lifespan. Similarly, people with a blunted experience of social pain (i.e., those high in alexithymia) reported feeling more excluded, a social injury, throughout their daily lives (Chester, Pond, & DeWall, 2015). Taken together, this wealth of evidence suggests that the brain automatically responds to exclusion, a social injury, much as it would respond to a physical injury, and that social pain serves a similar function to physical pain.

This proposal that exclusion is truly painful has been met with several criticisms. Central among these is that the presence of pain matrix activity does not actually represent the experience of pain. These critiques stem from the fact that the dACC, the most reliable neural correlate of social pain, is also involved in a host of other psychological processes such as expectancy violation (Somerville, Heatherton, & Kelley, 2006) and salience (Iannetti, Salomons, Moayedi, Mouraux, & Davis, 2013). Other critiques challenge the dACC-social pain link entirely (Cacioppo et al., 2013; Woo et al., 2014, see chapter "Research in Social Neuroscience: How Perceived Social Isolation, Ostracism, and Romantic Rejection Affect Our Brain"). However, there are good reasons to retain the reverse inference that dACC activity during social exclusion subserves social pain. The multifaceted function of the dACC is not a challenge to the social pain literature but can be integrated by the conceptualization of the dACC as a neural 'alarm system' that exhibits painful distress when regulatory goals are not met (Eisenberger & Lieberman, 2004). Further, meta-analytic evidence has shown that the dACC is reliably associated with pain and less so with other such processes (Eisenberger, 2015; Lieberman & Eisenberger, 2015; Rotge et al., 2015). Thus, the automatic response of social pain to exclusion is well supported and remains a fruitful area of investigation (for a more detailed rebuttal, see Eisenberger, 2015).

Controlled Brain Responses to Social Exclusion

Exclusion is automatically distressing and painful, yet people are not purely subject to such aversive sensations. The prefrontal cortex, along with other brain regions, often serves to exert a top-down, regulatory influence on these

bottom-up impulses (Heatherton & Wagner, 2011). This more controlled aspect of neural responses to exclusion appears to be centered on two brain regions: the ventral anterior cingulate cortex (vACC) and the ventrolateral prefrontal cortex (vLPFC).

The vACC lies just below the dACC and, like the dACC, serves multiple functions. Classically, this region was thought of as the 'emotional half' of the ACC, with the dACC serving a more cognitive function (Bush, Luu, & Posner, 2000). Although this dichotomy proved incorrect, the vACC plays an important role in regulating negative emotions and pain (Etkin, 2012; Petrovic, Kalso, Petersson, & Ingvar, 2002; Wager, Davidson, Hughes, Lindquist, & Ochsner, 2008). In the context of exclusion, vACC activity appears to be initially reduced by social exclusion (Somerville et al., 2006). Yet, when exclusion continues, vACC activity gradually increases (Cristofori et al., 2013). These findings together suggest that exclusion is initially painful (as evidenced by dACC activity) which is then regulated by the vACC.

In addition to the vACC, the right vLPFC (rVLPFC) is another brain region that appears to be critical for the regulation of social pain. Several brain-imaging studies have shown that the vLPFC—and especially its right hemisphere—is involved in various forms of emotion regulation (Berkman & Lieberman, 2009; Wager et al., 2008). Accordingly, studies focused on regulation of negative emotional stimuli have found that when the goal is to decrease negative emotions, activity in the vLPFC increases (Ochsner & Gross, 2005). Moreover, the physical pain literature has established that the vLPFC is critical for the top-down modulation of nociceptive inputs to the pain matrix (Wiech, Ploner, & Tracey, 2008).

This general finding may hold true in the context of social pain regulation. Brain imaging investigations of exclusion reliably showed vLPFC activity, particularly in the right hemisphere, and its negative association with self-reports of social pain (Chester & DeWall, 2014; Eisenberger et al., 2003). This finding has been further supported by research adopting neuromodulatory techniques. Specifically, transcranial direct current stimulation (tDCS) enables the modulation of activity of brain regions by increasing or decreasing their cortical excitability, thus allowing for causal inferences to be made.

Adopting this technique, one study showed that increasing the cortical excitability of the rVLPFC (through anodal stimulation) reduced social pain following social exclusion (Riva, Romero Lauro, DeWall, & Bushman, 2012). Another study tested the opposite effect and showed that decreasing the global neural activity of the rVLPFC (through cathodal stimulation) increased self-reported feelings of social pain, hurt feelings, and negative emotions resulting from social exclusion (Riva, Romero Lauro, Vergallito, DeWall, & Bushman, 2015). Crucially, in the latter study, researchers applied the same cathodal stimulation over a control region (the right posterior parietal cortex) and found no effects on people's emotional reactions caused by social exclusion. Overall, these studies suggest that the rVLPFC plays a key role in regulating responses to social exclusion and that it is possible to upregulate and downregulate reactions to social exclusion by modulating cortical activity of the rVLPFC. These modulatory findings fit well with the critical role of the rVLPFC in self-regulation and inhibition of many other impulses such as gambling,

substance abuse, and poor financial decisions (Aron, Robbins, & Poldrack, 2004; Cohen & Lieberman, 2010; Heatherton & Wagner, 2011; Wager et al., 2008). Indeed, there is no reason to expect that a large portion of the brain such as the rVLPFC is selectively involved in the modulation of negative emotions caused by social exclusion. Accordingly, it has been shown that anodal stimulation over the rVLPFC also reduces negative emotions (such as fear and anxiety)—but not positive emotions (such as happiness)—aroused by watching different movies (e.g., The Blair Witch Project; Romero Lauro, Riva, & Vergallito, 2016). Crucially, it remains uncertain whether naturally occurring activity in the vLPFC during painful events represents a functional regulation of pain, a dysfunctionally exacerbated pain response, or some combination of the two.

To summarize, the neuroscience of exclusion has demonstrated that exclusion initially results in pain matrix activity, primarily in the dACC. Subsequently, regulatory mechanisms in the vACC and vLPFC manage the pain and help excluded individuals cope.

Regulatory Strategies for Managing Social Pain

Self-regulation is not monolithic and instead is composed of many strategies through which individuals may try to harness the controlled components of the prefrontal cortex (PFC) to help effectively modulate the automatic response of the brain's pain matrix. Some of these strategies operate more effectively than others. In what follows, we briefly summarize several regulatory strategies, relate them to the neuroscience of exclusion, and suggest avenues for future research and intervention.

Reappraisal Versus Suppression

Emotion-regulation research has largely focused on two contrasting strategies of managing aversive affective states: reappraisal and suppression (Gross & John, 2003; Ochsner & Gross, 2005). Emotional suppression is perhaps the more intuitive of the strategies and pertains to the attempt to prevent any undesired manifestations of one's affective state (e.g., angry facial expression, racing heartbeat, nervous hand-wringing; Ochsner & Gross, 2005). Reappraisal, on the other hand, is focused on reframing the antecedents of the emotions such that they no longer evoke the undesired emotional response (Gross & John, 2003; Ochsner & Gross, 2005, 2008). Over a decade of research has yielded a simple answer: reappraisal is a far superior strategy to suppression in its consequences, efficacy, and sustainability (Ochsner & Gross, 2008). Both reappraisal and suppression are subserved by activity in the vLPFC (Ochsner, Bunge, Gross, & Gabrieli, 2002; Ohira et al., 2006; Wager et al., 2008). However, the differentiation between the two strategies is evident in the time course of vLPFC activity. Reappraisal yields earlier vLPFC activity, whereas

suppression has a delayed regulatory response in the vLPFC (Goldin, McRae, Ramel, & Gross, 2008). Further, reappraisal attenuates the automatic reactivity of brain regions that are associated with negative affect (e.g., amygdala, anterior insula; Ochsner et al., 2002) whereas suppression actually results in increased activity in these regions (Goldin et al., 2008). No investigation has yet explored the neural correlates of reappraisal and suppression on social pain, though we can predict that reappraisal would decrease social pain by increasing vLPFC activity and reducing pain matrix activity, whereas suppression would only serve to exacerbate the automatic pain matrix response to exclusion.

Affect Labeling

There exists a strong relationship between our feelings and the words we use to describe them. Through affect labeling, people can put their affective states such as social pain into words, a technique that adaptively regulates emotions (Pennebaker & Seagal, 1999). Affect labeling during emotional processing is associated with increased rVLPFC activity (Lieberman et al., 2007). This rVLPFC activity then likely inhibits activity in regions associated with the automatic generation of negative affect (i.e., the amygdala; Lieberman et al., 2007). Excluded individuals may benefit greatly from putting their social pain into words which may then exert mood-improving effects via the rVLPFC. Future research should manipulate both exclusion and affect labeling in a neuroimaging context to test this hypothesis.

Mindfulness

Despite its origins in ancient, Buddhist mediation practices, mindfulness is a technique that has relatively recently been investigated by psychological and neural scientists. Mindfulness interventions generally focus on the nonjudgmental awareness and acceptance of subjective feeling states (Brown & Ryan, 2003). This noncombative approach to emotion regulation shares many features with reappraisal and affect labeling and is generally quite effective. As evidence of its efficacy in relation to exclusion, excluded individuals who were previously made to be mindful of their emotions exhibited less aggression than controls (Heppner et al., 2008). However, neural investigations of mindfulness' salutary effects on responses to exclusion are currently lacking. Other neuroimaging studies have revealed that even brief mindfulness interventions can increase vLPFC activity during the expectation of negatively valenced stimuli (Lutz et al., 2014). Additionally, individuals high in dispositional mindfulness demonstrated a greater tendency to engage the rVLPFC during affect labeling (Creswell, Way, Eisenberger, & Lieberman, 2007). Therefore, mindfulness, prior to exclusion, might buffer the automatic social pain response by increasing regulatory rVLPFC activity.

Self-Affirmation

Social threats such as exclusion abound and cause considerable distress. An effective means of regulating such threats is self-affirmation, the process of reifying one's most important values (e.g., familial loyalty, honesty; Cohen & Sherman, 2014). This technique has shown promise in the domain of exclusion as exclusion-prone individuals improved their social functioning up to 2 months after a short, 15-min self-affirmation intervention (Stinson, Logel, Shepherd, & Zanna, 2011). Self-affirmations appear to increase the extent to which the ventromedial prefrontal cortex (vMPFC), a key component of the brain's dopaminergic reward pathway, is linked to self-regulatory goals (Falk et al., 2015). It may be that excluded individuals benefit from subsequent self-affirmation which upregulates the brain's reward pathway, thereby combating the brain's pain matrix and negative affect more generally. Indeed, previous research has shown that the vMPFC is a reliable neural mechanism of emotion regulation (Wager et al., 2008).

Social Support

People do not self-regulate in a vacuum and instead often rely on the support of others to cope. Research has demonstrated that daily experiences of social support can reduce the automatic dACC response to exclusion (Eisenberger, Taylor, Gable, Hilmert, & Lieberman, 2007). This finding suggests that the quantity and quality of social connections regulate dACC activity in response to social exclusion; therefore, individuals with high levels of social support are less likely to detect an instance of social exclusion in a detrimental way. Other research investigating the role of emotional support during exclusion demonstrated that empathic messages from others attenuated the subjective experience of social pain while simultaneously increasing activity in the rVLPFC (Onoda et al., 2009). Proxies for dispositional social support (i.e., trust and self-esteem) have been linked to reduced social pain through an indirect effect of greater rVLPFC activity during exclusion (Yanagisawa et al., 2011). Finally, another study explored the role of two different forms of social support, that is, physical support (i.e., physical contact) and cognitive support (i.e., communication), in modulating the neural correlates involved in social exclusion. Results showed that social exclusion following physical support influenced the activation of the anterior insula, an area associated with visceral pain and negative affect, whereas cognitive support influenced the activation of both the anterior insula and the temporal parietal junction, an area usually involved in the representation of mental states of others (Morese, Bosco, Lamm, Valentini, & Silani, 2016). Overall, these findings suggest that the support of others may reduce automatic social pain signals in the brain and increase controlled, regulatory responses.

Summary

Across all of these regulatory strategies, there appear to be many that have promising implications for the effective regulation of the pain of exclusion. The common thread amongst them is that it is best to avoid outright inhibition of social pain and to adopt a strategy that accepts its existence and alters it in a more positive fashion. At a neural level, it appears that each of these effective strategies shares some form of increase of rVLPFC functioning and/or the downregulation of the dACC or anterior insula. Prominent neural models of successful self-regulation would predict such a pattern of greater control and less automaticity (Heatherton & Wagner, 2011). However, it should be noted that magnifying vLPFC activity and blunting dACC responses to exclusion is not the simple cure that it may sound like. Such modification of these brain regions must be calibrated as excessive vLPFC activity during exclusion is linked to subsequent self-control failure (Chester & DeWall, 2014) whereas excessive blunting of the dACC is associated with greater feelings of daily social exclusion (Chester, Pond, et al., 2015). Interventions must be tailored to achieve an optimum level of both control and automaticity. Future research is needed to establish these regulatory benchmarks and the therapeutic methods through which to obtain them.

Regulatory Strategies for Promoting Affiliative Instead of Aggressive Responses to Exclusion

Exclusion often results in dysfunctional behavioral tendencies. One particularly deleterious effect of exclusion is an increase in aggression (Twenge et al., 2001) and its mirrored reduction in prosocial behavior (Twenge et al., 2007). Yet, how can the neuroscience of exclusion inform our attempts at reversing these effects?

The finding that exclusion is painful is relevant to the exclusion–aggression link. Physical pain is a reliable cause of aggressive responses that likely serve to mitigate whatever threat is causing the painful stimulus (Berkowitz, 1993). This retaliatory response can be functional (e.g., defending yourself from an attacker) or dysfunctional (e.g., lashing out at the dining room table). Social pain, as measured by dACC and anterior insula activity during exclusion, has been linked to both lesser and greater aggression (Chester et al., 2014). Among individuals who were less able to regulate the pain of exclusion (i.e., among those lower in dispositional executive functioning), social pain predicted louder noise blasts aimed at their excluders. However, this relationship was reversed among individuals higher in executive functioning. These person-specific associations speak to the crucial role of self-regulation in determining whether social pain results in aggressive or affiliative outcomes. Buttressing these findings, increasing the excitability of the rVLPFC via transcranial direct current stimulation attenuated aggressive responses

to exclusion (Riva, Romero Lauro, DeWall, Chester, & Bushman, 2015). A clear suggestion then emerges from this data, that bolstering the regulatory effects of the rVLPFC allows excluded individuals not only to regulate their social pain, but also to prevent it from translating into aggressive behavior.

Pain can make us hurt but it also motivates healing. Much as physical pain motivates us to heal the physical injury, it may be that social pain motivates us to heal our social injuries through post-exclusion reconnection (although, as discussed in chapter "Emotion Regulation following Social Exclusion: Psychological and Behavioral Strategies", an increased desire for reconnection does not always lead to positive outcomes). Supporting this prediction, exclusion-related activity in the dACC and anterior insula was associated with subsequent attempts to reconnect with excluders by seeking physical proximity with them in a chair-placement task (Chester, DeWall, & Pond, 2016). These findings may appear to contradict findings linking social pain to aggression. However, they instead suggest that social pain can promote either behavior when it is the salient option. Aggression and affiliation are not two sides of the same coin and are instead quite orthogonal (McGinley & Carlo, 2007). In an affiliative context, social pain can motivate affiliation, not aggression.

Another means to harness social pain to reduce aggression and increase prosociality is through empathy training (Eisenberg, Eggum, & Di Giunta, 2010). Interventions that encouraged individuals to take the perspective of others who socially threatened them effectively reduced aggression (e.g., Richardson, Hammock, Smith, Gardner, & Signo, 1994). This pacifying nature of empathy may be useful in altering brain activity associated with social exclusion and, subsequently, the exclusion–aggression link. Such empathic tendencies are subserved by several collections of brain regions including the pain matrix that can fire as if an injury that occurs to another is occurring to the self (Singer & Lamm, 2009). Indeed, although probably with a different strength according to situational factors (Riva & Andrighetto, 2012), empathy can occur for both physical (e.g., Jackson, Meltzoff, & Decety, 2005) and social injuries (e.g., Masten, Morelli, & Eisenberger, 2011). Empathy can also arise from the mentalizing network, which subserves theory-of-mind processes (Frith & Frith, 2003). Empathic responses in both the pain matrix and mentalizing network are heavily constrained by whether we are motivated to experience empathy with a given target (Zaki, 2014). For example, the misfortunes of others are often met with activity in both of these networks, yet these neural signatures of empathy are absent when the victim of a given misfortune is envied (Chester et al., 2013). This malleability of the pain matrix and mentalizing networks suggests that they are viable targets for empathy training interventions that seek to increase empathy and, thus, decrease aggression.

In summary, social exclusion's automatic activation of the pain matrix can result in aggression and affiliation, depending on individuals' self-regulatory abilities and situational inputs. Neuroscience-informed interventions, such as empathic perspective-taking and self-control building exercises, are promising means through which we might increase affiliative and decrease aggressive responses to social exclusion.

Regulatory Strategies for Combating Self-Control Failure After Exclusion

Pain is a fatiguing experience that takes a substantial toll on self-regulatory resources (Nes, Roach, & Segerstrom, 2009). Social exclusion takes a similar toll on self-control. Excluded individuals drink less of a healthy yet unpleasant-tasting beverage, eat more cookies, give in to frustration sooner, and fail to multitask compared to their accepted counterparts (Baumeister et al., 2005). The likely culprit behind such impaired self-control is the exhausting toll that the inhibition of social pain exacts on self-regulatory resources. As evidence of this hypothesis, the greater the extent to which individuals exhibited rVLPFC activity during exclusion, a proxy for the effortful regulation of social pain, the more they exhibited later impairments in self-regulation (Chester & DeWall, 2014). Specifically, rVLPFC recruitment during exclusion was associated with subsequently greater activity in the nucleus accumbens (NAcc; a brain region crucial to the experience of desire and reward; Bartra, McGuire, & Kable, 2013) while participants viewed images of pleasant stimuli (e.g., junk food, alcohol). Furthermore, the rVLPFC seemed fatigued as its typical regulatory influence upon the NAcc was weakened among individuals who exhibited greater rVLPFC activity during exclusion. Finally, these self-control failures extended into participants' daily lives as those who exhibited greater vLPFC activity during exclusion also exhibited greater exclusion-related self-control failures over 7 days.

These findings mesh well with other neuroimaging studies that demonstrate how a task that requires substantial regulatory recruitment of the lateral PFC (e.g., interracial interactions; viewing indulgent food items among dieters) can lead to subsequent self-control impairments and an inability of the vLPFC to regulate more automatic neural reactions (Richeson et al., 2003; Wagner, Altman, Boswell, Kelley, & Heatherton, 2013). Balance theory accounts for such findings under its proposition that the brain exists in a tenuous regulatory equilibrium between automatic brain regions (e.g., amygdala, NAcc) and controlled, regulatory regions in the lateral PFC (Heatherton & Wagner, 2011). The challenge moving forward for preventing self-regulatory impairment due to exclusion is to help individuals better calibrate their regulatory, rVLPFC responses such that they are not excessive nor insufficient. Neurofeedback techniques, in which individuals view a real-time feed of the activity of a given brain region, might be used during exclusion to encourage individuals to use certain regulatory techniques (e.g., mindful acceptance) to adaptively calibrate their neural responses to exclusion.

Regulatory Strategies for Reducing Deleterious Peripheral Responses to Exclusion

Perhaps most alarming are the deleterious effects that social exclusion has on physical health. Most germane to this chapter are the observations that excluded individuals exhibit greater inflammation, impaired immune function, and exacerbated

physiological stress responses (Muscatell & Eisenberger, 2012). The pain matrix evolved robust connections to the hypothalamic–pituitary–adrenal (HPA) axis and, through the HPA's endocrine functions, is readily able to affect the body's peripheral functions (Eisenberger, 2012). Specifically, dACC activity has been linked to sympathetic nervous system activity, cardiovascular acceleration, cortisol, and inflammatory protein release (Muscatell & Eisenberger, 2012; Slavich & Irwin, 2014). While these mechanisms are often functional responses to stressors, the chronic and excessively acute activation of them during long-term exclusion could result in health detriments including cancer, heart disease, vulnerability to pathogens, autoimmune disorders, and psychopathology (Nabi et al., 2013; Segerstrom & Miller, 2004). Alarmingly, the relationship between social pain and peripherally negative responses appears to be reciprocal as peripheral stress responses such as increased inflammation exacerbate dACC activity during exclusion (Eisenberger, Inagaki, Rameson, Mashal, & Irwin, 2009). This domain of exclusion's damaging effects on the body is an important avenue for future research.

As the first clear recommendation, any interventions that reduce exclusion-related dACC activity during exclusion, or at least de-couple it from the HPA axis, are likely to greatly reduce the ability of exclusion to impair health. The deleterious effects of activating the dACC's upregulation of the HPA axis can be inhibited by activity in the vMPFC (Muscatell & Eisenberger, 2012). Given the ability of self-affirmation to recruit the vMPFC (Falk et al., 2015), self-affirmations may be a particularly promising avenue for future research that seeks to counteract the dACC's harmful reactions to exclusion.

Such an apparently dysfunctional response begs the question, why exclusion elicits such harmful reactions in the body? It is likely an evolutionary trade-off from our ancestry in which social exclusion was such an imminently threatening prospect that sacrificing physical health for what might lead to reinclusion (e.g., an upregulated stress response) was a worthwhile cost to pay. In modern times, our physiology has yet to recalibrate to the more abundant social ecology in which humans live now. Therapeutic interventions must intercede for the sake of public health.

Regulatory Strategies for Reliving Social Exclusion

People continue to experience pain long after the injury from which it arose. However, social pain lingers longer than physical anguish. Specifically, individuals who recall an instance of social exclusion report more pain and exhibit greater cognitive impairment than those who recall instances of physical injuries (Chen, Williams, Fitness, & Newton, 2008). The greater weight of reliving social pain may be due to the fact that doing so recruits the affective pain matrix (i.e., the dACC, anterior insula; Meyer, Williams, & Eisenberger, 2015). Social pain memories are also associated with functional coupling between the affective pain matrix and the dorsomedial PFC (dMPFC), which subserves 'social working memory' (i.e., the ability to hold social information in working memory space and to retrieve it

efficiently; Meyer, Spunt, Berkman, Taylor, & Lieberman, 2012). By contrast, when individuals relive physical pain, the somatosensory (and not the affective) pain matrix is recruited and functionally couples with the vLPFC, a region strongly implicated in inhibition (Aron et al., 2004). The coupling between the affective pain matrix and the dMPFC suggests that social pain receives preferential memory encoding and this presents a regulatory challenge for individuals. How might individuals regulate socially painful memories?

A crucial first step in regulating socially painful memories would be to de-couple the dMPFC from the affective pain matrix during the experience. Brain stimulation techniques might be employed to disrupt dMPFC activity while individuals recall a socially painful event, thereby reducing its potency. An effective treatment for individuals with traumatic memories is to repeatedly expose them to the memory, a treatment that largely functions by increasing functional connectivity between the hippocampus and dopaminergic reward regions, such as the vMPFC and the striatum (Cisler et al., 2014). This increase in hippocampal-reward coupling likely reflects a neural signature of safety that attenuates the previously associated threat response. Individuals who struggle to regulate their socially painful memories may benefit from writing them down and reliving them as this process brings brain regions online that signal safety and positive affect.

Tailoring Regulatory Strategies for Individual Differences

Throughout this chapter, we have made multiple prescriptive suggestions as to how research and interventions might attempt to improve individuals' reactions to exclusion. However, what might be effective for one individual may not be effective for another. In this section of the chapter, we discuss several relevant individual differences in how individuals respond to social exclusion. We argue that interventions and scientific hypotheses must be theoretically customized to accommodate variation along each of these crucial trait dimensions.

Alexithymia

As we mentioned earlier in the chapter, affect and language have a deeply intertwined relationship. Individuals who exhibit a relative deficit in the ability to identify and describe their feelings with words are considered to possess high levels of alexithymia (Nemiah, Freyberger, & Sifneos, 1976). Alexithymia has been previously associated with blunted dACC responses during emotional processing (Deng, Ma, & Tang, 2013) and during social exclusion (Chester, Pond, et al., 2015). At face value, it may seem that this blunted social pain response is a boon and individuals might try to cultivate alexithymic traits to better face exclusion. However, social pain serves the purpose to alert individuals to their interpersonal foibles to prevent

future exclusion. Supporting this functional account, individuals high in alexithymia exhibit blunted dACC responses to exclusion, which then predict greater experiences of exclusion in their daily lives (Chester, Pond, et al., 2015). Thus, among these individuals, it is crucial that any intervention aimed to reduce their social pain should be avoided as it may result in a state similar to being under the influence of a social analgesic and therefore immune to the informative sting of exclusion that prevents them from enacting their own interpersonal demise. Alexithymic individuals might actually benefit from treatments aimed at increasing the automatic 'volume' of the dACC's alarm function and releasing the controlled 'brake' of the vLPFC. Affect labeling techniques that encourage alexithymic individuals to tap into and describe their experiences of social pain are likely an effective means through which this might be achieved.

Fear of Pain and Social Anxiety

Research showed that among the several factors that intervene in modulating pain perception, fear is key. Fear is a negatively valenced emotion characterized by a high level of arousal of the sympathetic nervous system. When individuals experience fear, the body activates the fight, flight, or freeze response, instantiated at the physiological level as increased heart rate, blood pressure, sweating, and dilation of the pupils. Fear of pain can be conceived as a negative emotional response evoked by elements or events associated with pain (Vlaeyen & Linton, 2000). Similar to many other fears, fear of pain is thought to be a functional response to possible threats. By virtue of its aversiveness, fear of pain protects the individual from engaging in behaviors or actions that might result in painful experiences (e.g., touching a flame).

However, scholars have suggested that high levels of fear can also be detrimental (Asmundson, Norton, & Vlaeyen, 2004). Accordingly, a study showed that whereas fear of physical pain increases the perception of physical pain, fear of social exclusion increases the perception of social pain (Riva, Williams, & Gallucci, 2014). Ultimately, high levels of fear of social exclusion might be linked with avoidance tendencies because of the increased social pain perception. This pattern of dysfunctional responses might be involved in the long-term experiences of social exclusion, with individuals high in fear of social exclusion being more likely to avoid, rather than seek, social connections. Nevertheless, future studies should uncover the neural correlates of fear of social exclusion and develop strategies to reduce the fear-avoidance link in the context of responses to social exclusion.

Similar to the effect of fear, avoidance tendencies have been linked, amongst other symptoms (Clark & Wells, 1995), to social anxiety. However, those high in social anxiety do not seem to show a greater level of distress than those lower in social anxiety at an initial stage, but as time continues, they maintain their levels of distress while those lower in social anxiety recover (Zadro, Boland, & Richardson, 2006). This temporal component may be crucial to developing interventions.

Clinicians should therefore cultivate cognitive strategies through which socially anxious individuals can develop long-term emotion-regulation strategies that combat lingering levels of social pain. Demonstrating a reciprocal component, excessive distress responses to exclusion predicted social anxiety symptoms 2 months after the instance of exclusion (Levinson, Langer, & Rodebaugh, 2013). Interventions that help individuals downregulate their automatic social pain reactivity may then, in turn, reduce fear and social anxiety symptomology.

Attachment Style

Human responses to exclusion are strongly shaped by their early-life interactions with their most important social connections, their caregivers. According to the *optimal calibration hypothesis*, the pain matrix is highly malleable at an early age and developmental experiences with social exclusion calibrate the pain matrix to respond to a lesser or greater extent to exclusion (Chester, Pond, Richman, & DeWall, 2012). Children who experience a great deal of exclusion from their caregivers develop an avoidant attachment style and a blunted social pain matrix. Children who experience unpredictable and chaotic levels of inclusion and exclusion develop an anxious attachment style and a highly sensitive and reactive social pain matrix. Both of these predictions are supported by neuroimaging evidence which demonstrates greater dACC reactivity to exclusion among anxiously attached young adults and lesser reactivity among avoidantly attached individuals (DeWall et al., 2012). As such, treatments and interventions should differentially approach these two dimensions; possibly seeking to upregulate social pain among avoidant individuals and to downregulate it among anxious ones. As these dimensions do not appear to influence controlled elements of the social pain response, interventions that target the inhibition or reappraisal of social pain are unlikely to succeed. Adding complexity to this prescriptive argument, these two dimensions of attachment are largely orthogonal and thus individuals may be simultaneously high on both dimensions. Additional research is needed to investigate what the neural social pain profile of these individuals looks like before any interventions can be tested.

Narcissism

Narcissism is a complicated trait that yields both grandiose and vulnerable typologies (Miller et al., 2011). Grandiose narcissists exhibit exaggerated self-positivity and seek admiration and affirmation from their peers. To date, only grandiose narcissism measures have been utilized in neuroimaging studies of exclusion and therefore the need for such investigations is great. Falk et al. (2015) observed that "narcissists' social pain [is] seen only in the brain." Substantiating this

claim, dispositional narcissism was associated with greater activity in the social pain matrix but not among self-reports of social pain. As further evidence, the extent to which narcissists recruit the dACC during exclusion predicts a greater amount of retaliatory aggression towards their excluders (Chester & DeWall, 2016). Thus, interventions may seek to reduce the automatic social pain response among narcissists. More important, such interventions may rely on physiological responses to treatment and not on self-reports as to how effective the treatment appears to be. The ability of exclusion to exert such a strong, yet hidden, effect on narcissists may stem from a structural disconnection between the NAcc and the medial PFC (Chester, Lynam, Powell, & DeWall, 2015). This impaired connection likely elicits an intrinsic impairment in the extent to which narcissists can buffer self-threats such as exclusion with positive affect generating in the NAcc. Interventions might benefit from attempts at rebuilding this connection, possibly through self-affirmation exercises that bolster the implicit link between the self and reward.

Rejection Sensitivity

As captured by differences in rejection sensitivity, individuals vary substantially in the extent to which they anticipate and become anxious over social exclusion (Downey & Feldman, 1996). People high in rejection sensitivity actively anticipate greater experiences of exclusion and respond to them with greater fear and anxiety (Downey & Feldman, 1996). Demonstrating a greater automatic reaction, individuals high in rejection sensitivity exhibited greater dACC reactivity to images of excluding others but not in response to disgust or anger faces (Burklund, Eisenberger, & Lieberman, 2007). Furthermore, individuals high in rejection sensitivity show reduced vLPFC activity during exclusion, which leave them vulnerable to the experience of social pain (Kross, Egner, Ochsner, Hirsch, & Downey, 2007). These findings demonstrate that rejection sensitivity both impairs the regulation of and increases the automatic presence of social pain. Interventions that operate on both of these top-down and bottom-up mechanisms are most likely to be effective among this population. Emotional reappraisal is particularly effective at operating on both of these pathways simultaneously (Wager et al., 2008) and is likely to be an effective skill to mollify rejection sensitivity.

Self-Esteem

Many people strive for high self-esteem, the positive regard for oneself, for its own sake. Yet fewer people realize the function that self-esteem serves, which is to signal the likelihood that one will be included by others (Leary & Baumeister, 2000). Experiences of high self-esteem arise from achievements and attributes that

make individuals likely to be socially included (e.g., physical attractiveness, athletic prowess; Leary & Baumeister, 2000). Given this specificity regarding social inclusion, it is not surprising that self-esteem strongly moderates neural responses to exclusion. Both dispositional and state self-esteem are negatively associated with reports of social pain as well as dACC reactivity to exclusion (Eisenberger, Inagaki, Muscatell, Byrne Haltom, & Leary, 2011; Onoda et al., 2010). The dACC thus tracks one's likelihood of exclusion and becomes sensitized to exclusion when that likelihood is high. Interventions on low self-esteem individuals might attempt to disentangle the dACC from this predictive function. For example, pairing instances of social exclusion with social support primes (e.g., images of close friends) might allow individuals with low self-esteem to reduce the dACC-generated social pain signal.

Important Caveats

Throughout this chapter, we have treated certain brain regions and their function as largely monolithic. Brain regions such as the dACC, vLPFC, and others are relatively massive and span billions of neurons. Within any of these regions the cytoarchitecture and connectivity profiles, and therefore their functionality, can vary substantially. Thus, it is possible that different neuron populations within the observed voxel-clusters of activity might represent different psychological processes. Further, when discussing the role of individual differences and their modulation of brain regions such as the dACC, it is unclear if changes in brain activity along these personality dimensions mean the same thing. For example, one might notice exaggerated dACC activity among individuals high in rejection sensitivity and anxious attachment. However, it is unclear whether this exacerbated neural signature represents increased social pain for both of these personality dimensions. Future research is needed to add granularity to our understanding of these brain regions and how individual differences modulate the meaning of these conclusions.

Conclusion

The brain, through the process of evolution, can tolerate many forms of anguish, yet social pain is one of the most acute. Given that exclusion is an immutable feature of the human condition, psychological and neural science must better understand how individuals respond to exclusion in functional ways. As it stands, exclusion yields impairment in almost every domain of human health and functioning. In this chapter, we hope to suggest some future directions for research and treatment that may result in advances in mankind's struggle against the threat of exclusion.

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Part IV
Final Assessment

Bridging the Gap Between Different Psychological Approaches to Understanding and Reducing the Impact of Social Exclusion

Jennifer Eck and Paolo Riva

Social connections are essential for maintaining physical and psychological health and well-being (Baumeister & Leary, 1995). In accord with this, a large body of research with people of different ages and in different contexts has shown that threats to belonging result in serious negative consequences (see Part II in this volume). In everyday life, threats to belonging become manifest in various forms, from averted eye gaze or being forgotten to being explicitly told that someone is not wanted or dehumanizing language (see chapter "Social Exclusion in Everyday Life"). It is therefore quite likely that almost everybody can recall an instance of threatened belonging. The omnipresence of threats to one's belonging and their negative impact on human functioning underscore the relevance of this topic as a field of research. Not surprisingly, the topic has been investigated across psychological subdisciplines. This volume has been dedicated to bringing together the psychological subdisciplines' different approaches to the topic to initiate a discussion about theories, methods, and findings. Specifically, this volume includes the approaches of social psychology, social neuroscience, developmental psychology, educational psychology, work and organizational psychology, clinical psychology, and social gerontology, which all have made a valuable contribution to the current state of knowledge on the topic. In this concluding chapter, we want to look back to the theories, methods, and findings of the psychological subdisciplines covered in this volume, point out similarities and differences between them, and provide starting points to bridge the gap between different psychological approaches to the topic of social exclusion. By doing this, we hope to motivate scientists to incorporate theories, methods, and findings of other approaches in their research and to consider joint research projects across psychological subdisciplines.

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The Importance of a Consistent Terminology

Communication with scientists of the different psychological subdisciplines revealed that there is a need for a consistent terminology of threats to belonging to facilitate the exchange across different psychological approaches. In this volume, we chose the term *social exclusion* to refer to threats to belonging in general. Social exclusion means "being kept apart from others" (Williams, 2007, p. 427). As people can be kept apart from others physically (e.g., social isolation) or emotionally (e.g., being told that one is not wanted), the term social exclusion seemed to be appropriate to include different threats to belonging. Moreover, the different types of social exclusion experiences can further be grouped in two subcategories: *ostracism*, primarily characterized by being ignored (e.g., averted eye gaze, biased language), and *rejection*, primarily characterized by direct negative attention (e.g., dehumanizing language, stigmatization) (see chapters "The Many Faces of Social Exclusion" and "Social Exclusion in Everyday Life").

Recent research has suggested that social exclusion experiences may induce feelings of being ignored—the primary characteristic of ostracism—even if the excluded individual is not directly ignored (see chapter "Social Exclusion in Everyday Life"). This finding provides one possible explanation why different types of social exclusion result in similar immediate responses such as hurt feelings and a reduced sense of belonging, self-esteem, control, and meaningful existence. Nonetheless, it is important to differentiate between ostracism and rejection (and between specific instances assigned to these phenomena) to be able to reveal outcomes that are specific of each phenomenon. For instance, Molden and colleagues observed that being rejected resulted in more prevention-focused or less promotion-focused responses than being ignored (Molden, Lucas, Gardner, Dean, & Knowles, 2009). Molden et al. (2009) further found that rejected and ignored individuals do not differ significantly in the extent to which their sense of belonging and control is reduced; however, rejected as opposed to ignored individuals show a lower self-esteem and a greater sense of meaningful existence.

These findings are in line with the hypotheses of Lee and Shrum (2012) that rejected individuals primarily perceive a threat to their relational needs (belonging and self-esteem), because being rejected involves explicit feedback that the individual is not wanted. By contrast, ignored individuals should primarily perceive a threat to their efficacy needs (control and meaningful existence), because being ignored implies not being noticed at all. On the basis of the temporal need-threat model (Williams, 2007, 2009) discussed in chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion", according to which behavior following social exclusion is guided by a desire to satisfy the most thwarted need(s), Lee and Shrum further hypothesized that rejected individuals think and behave in a prosocial manner (i.e., intended to help and benefit others; Weinstein & Ryan, 2010) to satisfy relational needs, whereas ignored individuals show acts of gaining attention and being noticed to satisfy efficacy needs (see also Williams, 2007, 2009). Supporting their hypotheses, Lee and Shrum (2012) found that

rejection increases helping and donation behavior, whereas ostracism increases conspicuous consumption (i.e., "showy behavior intended to impress others by calling attention to the self", p. 532). Lee and Shrum further showed that bolstering self-esteem reduces the effect of rejection on helping and donation behavior, whereas bolstering power or meaningful existence reduces the effect of ostracism on conspicuous consumption. Presumably, rejected individuals are more motivated than ostracized individuals to behave prosocially due to their lower self-esteem, because prosocial acts can increase self-esteem (Hitlin, 2007; Weinstein & Ryan, 2010). However, if behaving prosocially is related to the opportunity to be seen in a positive light by potential affiliation partners, both rejection and ostracism are likely to increase prosocial behavior because this might improve the chance of social reconnection to satisfy the thwarted need for belonging.

To summarize, the immediate responses to different types of social exclusion have been found to vary to a small degree. A new and promising approach to revealing the underlying processes may be a focus on thoughts and feelings shared by the different types such as feelings of being ignored. In contrast to the immediate responses to social exclusion, the responses following a cognitive appraisal of the situation and the activation of possible coping strategies have been found to vary to some degree according to the type of social exclusion. Effects of rejection and ostracism on thoughts, feelings, and behaviors are more likely to differ from each other if they can primarily be attributed to the threat those experiences pose to the need for self-esteem or meaningful existence (e.g., prosocial behavior not promoting social reconnection or acts for gaining attention). If, however, they can primarily be attributed to the threat those experiences pose to the need for belonging or control (e.g., seeking affiliation or acting aggressively), differences between rejection and ostracism are less likely to be found. Thus, a different terminology within and between psychological subdisciplines may result in apparently inconsistent findings and impede scientific progress. During the work on this volume, we recognized that it is not easy to have scientists of different psychological subdisciplines use the same terminology for the same phenomena. However, we strongly believe that the benefits of a consistent terminology outweigh the barriers that would have to be overcome.

The Study of Social Exclusion

The chapter "Methods for Investigating Social Exclusion" provides a comprehensive overview of paradigms to investigate social exclusion in experiments. These paradigms range from interpersonal interactions to interactions with computer avatars and the completion of written material. Some of these paradigms involve the experience of being ignored (e.g., Atimia, Cyberball), whereas others involve an explicit declaration that one is not wanted (e.g., get-acquainted paradigm, chat room or text message conversation). As reported above, rejected and ostracized individuals may differ in their responses following social exclusion. It is therefore important to consider the paradigm on which empirical findings are based on when drawing

conclusions about specific types of social exclusion or generalizing findings to social exclusion experiences in general. Moreover, scientists should take into account that actually being excluded in a situation and reliving or pre-living a social exclusion episode might produce different outcomes. For instance, research in social neuroscience has shown that the neural correlates of being ostracized in Cyberball differ from those of reliving an unwanted breakup (see chapter "Research in Social Neuroscience: How Perceived Social Isolation, Ostracism, and Romantic Rejection Affect Our Brain"). Although it is unclear whether this finding can be attributed to the different temporal perspective, one should be aware that recalling a social exclusion episode might be subject to biases and pre-living a social exclusion episode is contingent on one's power of imagination. Nonetheless, reliving or imagining social exclusion has been consistently found to produce similar psychological and behavioral effects as other social exclusion paradigms (see chapter "Methods for Investigating Social Exclusion").

The social exclusion paradigms that can be utilized in experiments usually focus on inducing feelings of short-term social exclusion. However, one written material manipulation of social exclusion, the future life alone paradigm (Twenge, Baumeister, Tice, & Stucke, 2001), might be regarded as a method to experimentally induce feelings of long-term social exclusion because individuals are made believe ending up alone in life. Both theories and empirical findings suggest that responses to short-term and long-term social exclusion may differ (see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion"). According to the temporal need-threat model (Williams, 2007, 2009), individuals respond to short-term social exclusion with an increased motivation to restore basic needs satisfaction. By contrast, individuals who continuously fail to restore need satisfaction or to end the social exclusion are likely to resign themselves to their low need satisfaction, which may cause feelings of alienation, depression, helplessness, and unworthiness. Moreover, Bernstein and Claypool (2012a, 2012b) provided empirical evidence that experiencing short-term social exclusion in Cyberball results in worsened mood and hypersensitivity to physical pain, whereas experiencing long-term social exclusion induced by the future life alone paradigm results in a state of numbness. They further showed that the high severity of anticipating a life alone accounts for this finding by comparing the future life alone paradigm with a modified, less severe version of it (Bernstein & Claypool, 2012b).

An alternative explanation for emotional numbness in response to social exclusion in the future life alone paradigm might be high self-presentational concerns (cf. Bernstein et al., 2013). Showing hurt feelings in response to a forecast based on a personality test may be embarrassing because the validity of this forecast cannot be verified. By contrast, admitting feeling hurt when being excluded from a game or when discussing a personal experience of social exclusion from the past seems to be more acceptable because others are more likely to sympathize with the excluded individual. In accord with this, Bernstein et al. (2013) showed that participants excluded in the typical future life alone paradigm, in which the experimenter was aware of the feedback, reported higher self-esteem than included participants while

the reverse was true for implicit measures of self-esteem. However, participants excluded in a modified version of the future life alone paradigm, in which the feedback was private, showed lower self-esteem than included participants on both explicit and implicit measures.

Thus, although the belief of ending up alone in life may be considered as a proxy for long-term social exclusion, the emotional numbness found in response to the future life alone paradigm might be attributed to the paradigm rather than the experience of long-term social exclusion. Supporting this assumption, a recent study showed that individuals who indicated being socially excluded for more than 3 months reported more negative emotions and stronger feelings of alienation, unworthiness, helplessness, and depression than patients suffering from physical pain, hypertension, or kidney disease for more than 3 months (Riva, Montali, Wirth, Curioni, & Williams, 2016).

Taken together, paying attention to what type of social exclusion experience is induced by a specific paradigm helps prevent discussions about apparently inconsistent findings that are actually findings pertaining only to specific types of social exclusion. This also illustrates the importance of a consistent terminology for the different types of social exclusion to be able to assign specific paradigms to specific social exclusion experiences.

Furthermore, it seems a worthwhile endeavor to adopt methods typically used in other psychological subdisciplines to expand the own data and to be able to examine new research questions. For instance, the conceptualization and measurement of peer group rejection or peers' rejecting sentiments on the one hand and behavioral exclusion or peers' exclusionary behaviors on the other hand, which are used in educational psychology (see chapter "Research in Educational Psychology: Social Exclusion in School"), may help extend theoretical assumptions and explain empirical findings in other subdisciplines such as clinical psychology, work and organizational psychology, and social psychology. In psychological subdisciplines other than educational psychology, research focuses on behavioral exclusion. However, as discussed in chapter "Research in Educational Psychology: Social Exclusion in School", recent research findings from a longitudinal study with children from kindergarten to grade 9 suggest that rejecting sentiments and behavioral exclusion provide unique information about the relationship between social exclusion and child maladjustment. Specifically, in early grades, only peers' rejecting sentiments significantly predicted aggressive symptoms whereas in grade 4 and higher, both peers' rejecting sentiments and peers' exclusionary behavior significantly predicted aggressive symptoms. By contrast, for withdrawn symptoms, only peers' exclusionary behavior was a significant predictor across all grades. Based on these findings, it would be interesting to investigate whether rejecting sentiments and exclusionary behaviors contribute differently to the development and maintenance of psychological disorders or to individuals' behavior at work. Moreover, social psychologists might help shed light on the underlying processes, extend the findings to further cognitive, emotional, or behavioral measures, and reveal moderating factors.

In addition to the exchange of concepts and measures across psychological subdisciplines, it is also important to replicate a particular social exclusion effect found

within the context of a specific psychological approach by employing different paradigms. This helps figure out whether findings pertain only to specific social exclusion experiences or are of a more general nature. As mentioned above, however, drawing such conclusions requires a consistent terminology for social exclusion experiences.

Theories of Social Exclusion

There are several theories developed and tested within psychological subdisciplines that have advanced our understanding of the impact of social exclusion. In this volume, theories concerning the origin of social exclusion, such as the social control model (Scott & Duffy, 2015; Scott & Thau, 2013) discussed in chapter "Research in Work and Organizational Psychology: Social Exclusion in the Workplace", focus on the adaptive function of excluding individuals who deviate from social expectations or group norms to maintain social hierarchy or group functioning. The chapter "Research in Developmental Psychology: Social Exclusion Among Children and Adolescents" shows that already preschoolers use gender stereotypes to decide who is allowed to join a group activity and who is not. In later childhood and adolescence, group norms and larger social norms begin to influence decisions about exclusion. The chapter "Research in Developmental Psychology: Social Exclusion Among Children and Adolescents" provides evidence that moral concepts of fairness, justice, and rights emerge between early and middle childhood. However, even if children personally support equality, they often resist advocating for it because they are well aware that deviating from group norms will likely lead to exclusion.

Often children and adults are excluded because of showing aggressive or other antisocial behaviors which threaten their peers or workmates (see chapters "Research in Educational Psychology: Social Exclusion in School" and "Research in Work and Organizational Psychology: Social Exclusion in the Workplace"). Excluding aggressive individuals protects the group and should signal the excluded individuals to change their behavior. However, exclusion often promotes aggressive and antisocial behavior, especially when the expectation of future social acceptance is low (see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion"). In addition to the threat excluded individuals' aggression can pose to the excluding group, there are probably further dysfunctional consequences when a group too readily exclude deviants. For instance, research in work and organizational psychology has shown that social exclusion is used as a means to punish whistle-bowlers who indeed can benefit groups by helping identify those who act unethically (see chapter "Research in Work and Organizational Psychology: Social Exclusion in the Workplace"). Future research may address the lack of findings on the dysfunctional effects of social exclusion on groups' preservation.

The chapter "Research in Social Gerontology: Social Exclusion of Aging Adults" discusses socioemotional selectivity theory (Carstensen, 1992; Carstensen, Fung, & Charles, 2003) in the context of factors predicting social isolation among older

adults. This theory postulates that perceptions of limited time motivate people to direct attention to emotionally meaningful goals. As a result, older people approaching death might reduce the number of their social relationships and selectively invest their limited time in those social relationships that are the most rewarding. This reasoning may also be applied to younger people. For instance, children and adolescents who have to invest a lot of time in schoolwork or have a very time-consuming hobby, and employees and leaders who work all the time, may perceive limited time to live their life and, therefore, maintain only few social relationships. This might in turn increase rejecting sentiments in peers or workmates and render behavioral exclusion more likely. Investigating such processes might also reveal further moderating factors of the kind of response to social exclusion (prosocial vs. antisocial vs. avoidant).

In addition to theories concerning the origin of social exclusion, this volume includes the discussion of theories concerning the consequences of social exclusion and their moderation. In social psychology (see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion"), the temporal need-threat model (Williams, 2007, 2009) is one of the most prevalent theories that summarize the consequences of social exclusion. This model focuses on the threat social exclusion poses to the basic needs for belonging, self-esteem, control, and meaningful existence and postulates that behavior following social exclusion is motivated by the goal of recovering from that need threat. Both the kind of behavior shown and the duration of psychological recovery are supposed to be influenced by the meaning and underlying motive of the exclusionary episode.

The multimotive model (Richman & Leary, 2009) focuses on construals people make following an exclusionary episode, such as the value of the relationship with the excluder, the fairness of the exclusion, and the availability of other affiliation opportunities. Although this model can account for many apparent contradictions in the literature concerning prosocial, antisocial, or socially avoidant responses to social exclusion, it would benefit from incorporating construals that have been found to be relevant in other psychological subdisciplines. For example, research in work and organizational psychology has revealed that the behavioral response to social exclusion is influenced by the extent to which the exclusionary episode is attributed to internal versus external causes (e.g., envy) and by concerns about future outcomes (see chapter "Research in Work and Organizational Psychology: Social Exclusion in the Workplace").

Moreover, research has shown that it is not the availability of affiliation alternatives per se that influences behavioral responses to social exclusion but the expectations of gaining social acceptance. For instance, Sommer and Bernieri (2015) found that individuals receiving rejecting feedback from their interaction partners automatically increased the probability of reconnection with new interaction partners by unconsciously mimicking them (see Lakin, Chartrand, & Arkin, 2008, for similar results). Previous research has shown that pursuing an affiliation goal motivates nonconscious mimicry and that mimicry fosters liking and rapport (Chartrand & van Baaren, 2009; Lakin & Chartrand, 2003). However, Sommer and Bernieri further found that rejected individuals tried to reduce social pain of a possible

future rejection by deliberately deprecating their new interaction partners. This finding was accounted for by rejected individuals' low expectation of gaining social acceptance. As mentioned previously in this chapter, rejection lowers self-esteem, and low self-esteem has been found to be associated with a tendency to expect rejection by others (Leary & Baumeister, 2000; Leary, Tambor, Terdal, & Downs, 1995). This study illustrates that the extent to which behavioral measures used in a study are explicit versus implicit may also affect the kind of response to social exclusion.

Furthermore, the explanatory power of the multimotive model would increase by incorporating the assumptions of the social monitoring system (Pickett & Gardner, 2005). The social monitoring system is part of a mechanism that regulates one's need to belong. If an individual's sense of belonging is unsatisfied, the social monitoring system increases the individual's attention to and processing of affiliation-relevant information to facilitate social reconnection. The social monitoring system has also contributed to resolving apparent contradictions in the literature concerning the consequences of social exclusion (see chapter "Research in Social Psychology: Consequences of Short- and Long-Term Social Exclusion").

Considered together, working on a comprehensive model that incorporates the empirically supported assumptions of current models concerning the consequences of social exclusion and their moderation, as well as further moderating factors identified across psychological subdisciplines, seems to be a worthwhile endeavor. This model would quite likely help understand the strong effects of social exclusion, derive hypotheses, and direct research on social exclusion in a wide range of contexts (e.g., school, workplace) and samples (e.g., children, adults with psychological disorders, aging adults).

Finally, research in social and clinical psychology has suggested factors that may explain effects of social exclusion shared by different exclusion experiences or different psychological disorders. Specifically, the chapter "Social Exclusion in Everyday Life" discusses first empirical evidence showing that different types of social exclusion induce feelings of being ignored even if the excluded individual is not directly ignored. Further, the chapter "Research in Clinical Psychology: Social Exclusion and Psychological Disorders" discusses hormonal changes and changes to thoughts and feelings in response to social exclusion that may be indicators of subsequent psychopathology across different psychological disorders. Thus, conducting studies that allow a comparison of social exclusion effects across different types of exclusion experiences or across different psychological disorders seems to be a promising avenue for developing more integrative theoretical frameworks of the impact of social exclusion.

Interventions to Reduce Social Exclusion Effects

Research in developmental psychology, work and organizational psychology, and social gerontology has focused on interventions that reduce or prevent the occurrence of social exclusion among children and adolescents, workmates, or aging

adults. Specifically, research in developmental psychology (see chapter "Research in Developmental Psychology: Social Exclusion Among Children and Adolescents") has revealed that environments providing children and adolescents with the opportunity for friendship with peers of other social groups (e.g., racially diverse school classes), and norms of fairness, tolerance, and inclusiveness established by adults (e.g., parents), institutions (e.g., school), or peers, reduce children's and adolescents' prejudicial attitudes and promote inclusion. Likewise, research in work and organizational psychology (see chapter "Research in Work and Organizational Psychology: Social Exclusion in the Workplace") has suggested that building an organizational climate focused on respecting and valuing each organizational member can help reduce or prevent workplace social exclusion. In addition to training programs that foster an understanding of acceptable and unacceptable interpersonal behaviors in workgroups, programs focused on social skills can benefit relationships among workmates. For instance, training in conflict management can counter the occurrence of workplace social exclusion by providing employees with tools to handle conflict more effectively than with social exclusion of specific organizational members. Finally, research in social gerontology (see chapter "Research in Social Gerontology: Social Exclusion of Aging Adults") has shown that volunteering can increase the level of physical and cognitive activity among aging adults as well as their perceived level of social support, which, in turn, benefit aging adults' health and well-being.

In contrast to the research described above, research in social psychology has focused on strategies that help excluded individuals cope with the negative emotions elicited by social exclusion and the threat social exclusion poses to the basic needs for belonging, self-esteem, control, and meaningful existence. Specifically, research reviewed in the chapter "Emotion Regulation following Social Exclusion: Psychological and Behavioral Strategies" has suggested that focused attention on objects unrelated to the exclusionary event (e.g., breathing), positive reappraisal of the exclusionary event (i.e., cognitively alter the mental representation of the event in a way that reduces its emotional impact), and acceptance of the exclusionary event as it is without evaluating it as positive or negative can be considered functional strategies for emotion regulation following social exclusion. Moreover, regulating negative emotions by increasing physical activity can also be considered a functional strategy for emotion regulation because physical activity can promote physical health and improve mood while distracting from ruminative thoughts related to the exclusionary event. Although regaining social connections can be considered as the ultimate goal after social exclusion, seeking social reconnection can make the excluded individual more susceptible to social influence. This susceptibility to social influence may cause excluded individuals to show behavior they would not show under other circumstances, which can also elicit negative emotions. By contrast, aggressive behavior can help regulate negative emotions but can be considered as a dysfunctional strategy because it is likely to result in further social exclusion by others. Likewise, gambling and consuming violent media, alcohol, or other drugs might temporarily reduce negative emotions following social exclusion but cause problems such as financial loss and health issues in the long run, which, in turn, can lead to social exclusion. Further, the chapter "Emotion

Regulation following Social Exclusion: Psychological and Behavioral Strategies"
discusses research showing that suppression of thoughts related to the exclusionary
event can also be considered a dysfunctional strategy because suppression has been
found to increase, rather than decrease, negative emotional experiences and to
impair cognitive abilities and self-regulation.

Research in social neuroscience is in line with the above-mentioned findings on
emotion regulation strategies. The chapter "Brain Mechanisms to Regulate Negative
Reactions to Social Exclusion" discusses research showing that reappraisal
decreases the activity in brain regions associated with negative affect whereas sup-
pression increases the activity in these regions. Overall, the research reviewed
in that chapter suggests that strategies effectively regulating negative emotions fol-
lowing social exclusion decrease activity in brain regions associated with negative
affect (e.g., reappraisal, social support) and/or increase activity in brain regions
associated with reducing negative affect (e.g., affect labeling, mindfulness) or asso-
ciated with rewards (e.g., self-affirmation). It is important to note, however, that a
reduced activity in the brain regions associated with negative affect has been linked
with an increase in daily experiences of social exclusion (Chester, Pond, & DeWall,
2015). Presumably, individuals with a blunted activity in these brain regions are less
likely to detect cues to social exclusion and take action against it because they lack
the experience of negative affect in response to social exclusion, which serves as an
alarm signal. Moreover, a higher activity in brain regions associated with reducing
negative affect has been found to impair self-regulation (Chester & DeWall, 2014).
Thus, interventions that aim at an optimum level of activity in the involved brain
regions would be preferable.

Furthermore, the chapter "Coping with or Buffering Against the Negative Impact
of Social Exclusion on Basic Needs: A Review of Strategies" reviews research on
coping strategies that can facilitate psychological recovery from the negative impact
of social exclusion on basic needs, especially when no potential affiliation partners
are available or the expectation of gaining social acceptance is low. Specifically, that
chapter discusses research showing that reminders of social bonds with close others,
pets, and even favorite celebrities help restore need satisfaction, improve mood, and
reduce aggressive responses to social exclusion. In addition to reminders of specific
social bonds, the affirmation of self-transcendent values concerning social life and
relationships have been found to facilitate recovery of basic needs satisfaction and
reduce self-regulation failure typically occurring following social exclusion.
Another strategy to facilitate psychological recovery from social exclusion is the
use of social surrogates such as parasocial attachments (e.g., with favorite television
characters), comfort food (i.e., food whose intake is subjectively experienced as
satisfying), and nature connectedness. However, social surrogates help regain only
an illusion of belonging because they are not responsive to the individual. Further,
turning to religion has been found to facilitate recovery of basic needs satisfaction
and reduce aggressive behavior following an exclusionary episode but more so for
believers than nonbelievers.

The chapter "Coping with or Buffering Against the Negative Impact of Social Exclusion on Basic Needs: A Review of Strategies" also introduces and provides evidence for the psychological resource hypothesis that building up strong psychological resources, such as belonging, self-esteem, control, and meaningfulness, prior to or at the onset of an exclusionary episode serves as a buffer against the threat social exclusion poses to the basic needs. Investigating such buffering strategies is a new and promising approach for future research because the negative impact of social exclusion on basic needs was supposed to be resistant to moderation for a long time. The buffering strategies reviewed in that chapter are social companionship of a close other during the exclusionary event, perceiving oneself as a member of a majority group, thinking about money, and visualizing oneself in a powerful position.

The coping and buffering strategies to reduce social exclusion effects that were developed in social psychology are worth being tested in different contexts (e.g., school, workplace) and with different samples (e.g., children, adults with psychological disorders, aging adults). For instance, children excluded in school might cope with their negative emotions by increasing physical activity; employees excluded by their workmates might fill the gap of belonging by having photographs of their beloved family and friends on their desk or eating comfort food for lunch; and aging adults might feel less bad about their social isolation when reappraising their situation in a more positive way or accepting it as it is without evaluating it. Moreover, using repeatedly strategies to build up psychological resources such as perceiving oneself as a member of a majority group or thinking of having money might help reduce one's susceptibility to the negative impact of social exclusion on basic needs.

Conclusion

Social exclusion has been investigated within different psychological subdisciplines. As a next step, the valuable contributions of the different psychological approaches must be brought together to further advance our understanding of this phenomenon. This volume is created to help achieve this goal. In this concluding chapter, we discuss similarities and differences between theories, methods, and findings reviewed in this volume to help bridge the gap between the different psychological approaches to the topic of social exclusion. This discussion reveals that it is important to use a consistent terminology for different types of social exclusion experiences and to exchange methods across psychological subdisciplines. Moreover, there is both a need for a comprehensive theoretical model of social exclusion effects and their moderation that incorporates research of different psychological approaches and a need for more research on interventions to reduce the impact of social exclusion.

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