A Winding Road: Teresa Amabile and Creative Process Research

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As noted throughout this volume, Teresa Amabile's work is best known for her model of and method for studying creative outcomes—the extent to which a product or service is novel and useful. In this chapter, we focus on a less recognized, but equally important aspect of her work: her models of the creative process. Creative process describes *how* creative work is produced over time, rather than the characteristics of outcomes or creators (Drazin, Glynn, & Kazanjian, 1999; Mainemelis, 2010). If creativity had a "recipe," personal characteristics, resources, and other contextual antecedents would be the ingredients, while the process model is the description of the sequence and manner of combining ingredients over time. Below, we discuss the history of Amabile's process models of creativity (e.g., Amabile, 1983, 1996; Amabile & Pratt, 2016; Fisher & Amabile, 2009), how they have informed subsequent research on creative

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processes (especially in organizations), and new directions for creative process research, as well as the first author's reflections on the process of creating with Teresa Amabile.

A Brief History of Amabile's Process Models of Creativity

Amabile's texts *The Social Psychology of Creativity* (1983) and the updated version *Creativity in Context* (1996) were some of the first to propose models of the creative process grounded in the social psychology of creativity. The models were further updated in a recent publication (Amabile & Pratt, 2016). Table 4.1 details the key contributions and the changes made in each of these models.

These process models advanced creativity research in three ways. The first is by introducing the different activities or steps in the creative process; the second is by emphasizing social nature of creativity; the third is by conceptualizing dynamism within the creative process. We describe each of these contributions below.

Stages of Activity in the Creative Process

One of the main contributions of Amabile's creative process models is the identification of different stages of activity in the creative process. In all iterations, the process model contains five stages: (1) Task identification (2) Preparation; (3) Response Generation; (4) Response Validation and Communication; (5) Outcomes. Two basic arguments underlie this model. First, each stage is necessary for ideas to move from conception to completion. In other words, creativity does not happen all at once in a sudden flash of insight, but emerges through a predictable combination of activities over time. Second, each of these activities is catalyzed by specific combinations of motivation, domain-relevant skills, and creative thinking skills. For instance, motivation is particularly important in task identification (Stage 1), in that people who enjoy doing a kind of work will be more likely to identify novel tasks and problems to work

Table 4.1 Major contributions of and changes to Amabile's models of the creative process

	The Social psychology of creativity: A componential conceptualization (Amabile, 1983)	Creativity in context: Update to "The social psychology of creativity" (Amabile, 1996)	The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning (Amabile & Pratt, 2016)
Stages of activity in the creative process	Introducing a new phase: "Task presentation"	Changing the name of Stage 1 from "Task Presentation" to "Problem or Task Identification"	Recognizing the role of meaningful work
	Introducing a new phase: "Outcome"	Changing the definition of intrinsic and extrinsic motivation. Including synergistic and non-synergic extrinsic motivators which significantly revises the original intrinsic motivation principle	
	Introducing the components of creative production: "Domain-Relevant Skills—Creativity-Relevant Skills—Task Motivation"		

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Table 4.1 (continued)

	The Social psychology of creativity: A componential conceptualization (Amabile, 1983)	Creativity in context: Update to "The social psychology of creativity" (Amabile, 1996)	The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning (Amabile & Pratt, 2016)
The social nature of the creative process	Theorizing how social factors contribute to different stages of the creative process	Including "Social environment" in the figure Changing the label "Creativity Relevant Skills" to "Creativity Relevant Processes" Changing the label "Response Validation" to "Response Validation & Communication"	Depicting work environment is an open system susceptible to broader socio-cultural forces Acknowledging that team creativity is not a simple aggregation of the creativity of individuals
Dynamism within the creative process	Introducing the feedback cycle: The process outcome can influence task motivation	Noting that it is not strictly sequential process	Introducing the progress principle, i.e., process does not terminate in the face of success of failure Discussing the relationship between innovation and creativity

on. In contrast, domain-relevant skills are more important in efficient preparation for the task (Stage 2), such that using and developing expertise equips creators with the raw materials for the subsequent stages. These basic insights paved the way for research that focused on the unique dynamics of specific phases of the creative process beyond idea generation, such as idea elaboration (e.g., Berg, 2014; Perry-Smith & Mannucci, 2017), evaluation and validation (e.g., Berg, 2016, 2019; Lowenstein & Mueller, 2016; Mueller, Melwani, & Goncalo, 2012), and implementation (e.g. Baer, 2012; Lu, Bartol, Venkatramani, Zheng, & Liu, 2019).

The Social Nature of the Creative Process

Building an understanding of the social side of creativity is a second important contribution of Amabile's research on creative processes. Beyond prior research on the personal characteristics of creative individuals, Amabile (1983) broke new ground by theorizing how social factors contribute to different stages of the creative process. Specifically, the creative process becomes increasingly social as the creator moves from task identification toward implementation, extending the process from the individual's mind to a point where the idea is shared with others. This implies that social interaction and support are crucial for the success of a creative process. However, social support may be required at the earlier stages to promote divergence and shift perspectives. The dual propositions in the social model of the creative process laid the foundation for subsequent research on the specific ways in which social interaction influences the creative process at different times (e.g., Hargadon & Bechky, 2006; Harrison & Rouse, 2015; Perry-Smith & Mannucci, 2017).

Dynamism Within the Creative Process

Although Amabile (1983) depicted the creative process as a linear progression through these phases, she seeded the notion of dynamism in the creative process, arguing that, the creative process is iterative. Depending on the success or failure of individual stages within the

process, people might return to earlier stages of the process again. Updates to the model in 1996 and 2016 further advanced the notion of dynamism in the creative process, arguing that success, failure, and progress can have different influences for subsequent engagement in creative processes and can reciprocally influence intrinsic motivation and domain-relevant skills. For example, progress toward developing an outcome increases intrinsic motivation, which in turn increases the possibility of re-engaging with the creative process and continuing the search for a novel outcome. Furthermore, the increased intrinsic motivation could also influence domain-relevant skills and creativity relevant processes by encouraging learning and spending more effort on breaking free of habitual mindsets. In other words, the creative process proposed is truly dynamic; the experiences and outcomes of each iteration shape subsequent iterations by influencing different components relevant to creativity. Recent research has further elaborated the specific ways in which creative experiences and interactions involve dynamic and reciprocal influences (e.g., Harrison & Rouse, 2014, 2015; Harvey & Kou, 2013).

New Directions for Creative Process Research

Amabile's work on creative processes is not merely an influence but a dialogue that has paved a path for new research. Amabile and Pratt (2016) exemplify this approach by synthesizing recent research to update and develop a dynamic componential model of creativity and innovation. Keeping in line with this tradition, we identify three areas for future research on creative processes based on recent developments in the field.

Understanding Nonlinear Processes

Amabile and Pratt (2016) introduce feedback loops that explain how psychological factors such as motivation and emotion undergird iterations within the creative process and connect creativity and organizational innovation. However, the authors also state that even though they

have "added new dynamic elements to the model, much is unknown about them." (p. 179). We believe that this provocation provides the foundation for more systematic inquiry into the nonlinear dynamics of creation. Research has already started to consider the temporal dynamics of nonlinear processes (e.g., Fisher & Amabile, 2009; Harrison & Rouse, 2014), and the psychological experiences associated with nonlinear creative processes (e.g., Fisher & Barrett, 2019; Harvey, 2014). We see room for further research that explicitly considers when creative processes may be linear versus nonlinear, what nonlinearity might entail (i.e., are stages skipped, combined, repeated), how ideas that are developed through nonlinear processes may differ from ideas that are developed through linear creative processes, and how creators may cope with some of the challenges of nonlinearity.

Investigating Multiple Creative Processes

A crucial contribution of Amabile's research on creativity is the introduction of the final stage of the process model: outcome assessment. It is here that she introduces the idea that a creative process can have three possible outcomes: success, failure, and progress. Whereas success or failure would result in the conclusion of the creative process, the experience of progress can lead creators to return to earlier phases of the idea journey. The most recent update to the model (Amabile & Pratt, 2016) considers the influence of success or failure on future creative work. In this idea we see the sparks for a fruitful new area of enquiry—an investigation of multiple creative processes (Fisher & Amabile, 2009). Whereas research on creativity and creative processes have primarily focused on individual idea journeys, we see potential for the emergence of a new body of research that focuses on (a) the process of developing multiple creative ideas (b) starts, stops, and overlaps between different ideas, and (c) the practices associated with managing several simultaneous creative processes (e.g., Ananth & Harvey, 2019).

Considering New Technologies and New Work Practices

The role of the social environment on individual and team creativity has been prominent even in early versions of Amabile's process models. In the most recent update, Amabile and Pratt (2016) depicted the work environment as "an open system, susceptible to broader socio-cultural forces." Indeed, emergence of new work practices, such as remote work, co-working, and on-demand work, and technologies, such as artificial intelligence, rapid prototyping, and robotics, are changing the landscape of creative work. More and more people have autonomy over what to work on, as well as where, when and with whom to work. Considering these changes, we expect future investigations of whether and how new work environments influence the experiences of creative workers and the creative process; whether individuals and the creative activity itself influence, in turn, work environments (e.g., Demir Caliskan & Fisher, 2020) and how people create, use, and collaborate with new technologies for creative work (Amabile, 2020).

The Process of Creating with Teresa Amabile

[The following was written by the first author about his work with Teresa Amabile as her student and collaborator]

My experience studying the creative process with Teresa Amabile illustrates both her embrace of amending her own work, and the nonlinear and unpredictable path of the creative process itself. I discovered Teresa's research on creativity when reviewing literature for my Master's thesis about improvisation in different art forms. At the time, I knew nothing about social psychology or organizational behavior—I was working as a jazz trumpet player in New York City and considering different options for studying improvisation as part of a Ph.D. Up until finding her work, I had been applying to musicology programs, but was taken with her work on the social psychology of creativity. I applied to the Ph.D. program at Harvard specifically to work with her and, in my application, noted that I thought improvisation was an important creative avenue that didn't

quite fit her description of the creative process. To my lasting surprise, she agreed to work with me.

Despite my total lack of experience in OB or psychology, Teresa always treated me as a valued colleague who had an important perspective—not as an acolyte needing to receive her wisdom. We spent many months in my first year of grad school debating what improvisation was and how it related to creativity, culminating in our paper on improvisational creativity (Fisher & Amabile, 2009). In this paper, we argued why improvisation is inherently a creative process, in that it is intended to generate useful novelty. However, in contrast to the traditional "compositional" creative process described above, preparation is the first step in improvisation, preceding task identification. Task identification, response generation, and response execution then emerge simultaneously. These process-based differences impact the kinds of expertise, creativity relevant processes, and work environments that promote improvisational creativity. Importantly, we suggest that the sequence of traditional stages of the creative process affect its antecedents and consequences, such that trying to explain all creativity with a single sequence of stages may be misguided.

From both our work together and the research reviewed above, I am more convinced than ever that creativity researchers need to focus more on studying the creative process. The ways in which creative processes are nonlinear have implications for both the individual skills, contextual antecedents, and kinds of collaborations that are important in creative work (Fisher & Barrett, 2019; Perry-Smith & Mannucci, 2017). For instance, together with our amazing coauthor Julianna Pillemer, we have found the importance of helping in creative work (Fisher, Amabile, & Pillemer, 2020; Amabile, Fisher, & Pillemer, 2014), including how leaders use "deep help" to catalyze creative progress in multiple ways (Fisher, Pillemer, & Amabile, 2018).

During this research, there was always an implicit meta-commentary on the creative process because research IS a creative process—or, at least it is with Teresa. And, Teresa was constantly putting into practice the results of her research and what we were finding. In her work with me, she embodied the "supervisor support" and providing "catalysts" and "nourishers" for work progress that she had discovered in her

earlier work (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Amabile & Kramer, 2011). And, she was constantly open to new ways of thinking and working.

What I still find amazing is how willing Teresa was to listen to the ramblings of a novice researcher trying to find his way toward amending a key aspect of her work. Moreover, she patiently tolerated my more freewheeling (re: disorganized, unreliable) creative process that I know clashed with her conscientious and disciplined proclivities. And, over the years, I have realized how much I owe to Teresa's patient nurturing of me and our work together. Working with her has been an amazing journey toward understanding the winding roads of the creative process. I've tried to carry on these same ideas in my work with doctoral students and collaborators as we continue to try to understand the secrets of the creative process (e.g., Hua & Fisher, 2020; Demir Caliskan, & Fisher, 2020; Fisher, Harvey, Ananth, & Xie, 2019; Fisher, Demir Caliskan, Hua, & Cronin, 2020) and continue the journey Teresa started us on.

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