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Abstract

Contemporary neuroscience has become a poster child for medical sciences and has gained tremendous salience in the public eye. The growth of neuroscience has resulted in multiple developments, generating a flow of new research, allowing the exploration of new research domains beyond the traditional frontiers of medical science, and enticing the younger generations to train in neuroscience. At the same time, the public, in its plural manifestations, has become eager to engage with the advances of neuroscience. In this introduction to this section of the Handbook, I underscore and discuss briefly three aspects of the relationship between the media and neuroethics, which illustrate the importance of the media. I then introduce three original contributions dealing with the media and neuroethics. Hopefully, readers of this book will find these contributions stimulating and that the latter will encourage more needed work in this area.

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Introduction

In many ways, contemporary neuroscience has become a poster child for medical sciences and has gained tremendous salience in the public eye. Starting in the 1960s and 1970s, the international neuroscience community has grown almost steadily. International societies such as the Society for Neuroscience and the International Brain Organization have seen their memberships reach considerable proportions. This growth has resulted in multiple developments, such as generating a flow of new research, allowing the exploration of new research domains beyond the traditional frontiers of medical science, and enticing the younger generations to train in neuroscience. At the same time, the public, in its plural manifestations, has become eager to engage with the advances of neuroscience. A cascade of contributions written for the general public has approached the diagnosis and treatment of neurological and psychiatric illness as well as explored the application of neuroscience knowledge to education, law, and the psychology of everyday life (e.g., creativity, parenting, memory). It is therefore no surprise that the public salience of neuroscience has intimate and multifaceted connections to the field of neuroethics: As neuroscience ventured closer and closer into practical and daily life, it has generated questions about its impact on human values. In the following, I underscore and discuss briefly three aspects of the relationship between the media and neuroethics to introduce this section of the *Handbook*.

Public Notoriety and Visibility of Neuroscience as a Precondition for Neuroethics

First, neuroethics as we now know it would not have emerged as a distinct endeavor were it not for the public notoriety of neuroscience itself. (This does not mean that ethical challenges in neuroscience would not exist without neuroethics or that other responses – other than neuroethics – to these challenges would have not flourished). Scholars and others are keenly aware that advances in neuroscience have percolated to the broader public and public domain, and are therefore also aware of their potential implications. Likewise, ethicists and others have less interest in working on topics which have no bearing on public opinion and behavior (unlike the use of neuropharmaceuticals for enhancement of performance, or non-referred purchase of neuroimaging services), which touch the public directly.

Neuroethics as a Step in the Development of a More Open and Public Bioethics

Second, the field of neuroethics emerged at a time when bioethics itself was opening to empirical research and reconnecting with an impetus found at the beginning of its history, i.e., to consider non-expert perspectives (e.g., see chapter of the Belmont Report dealing with public attitudes toward science and Racine (2010) for a review). Because the impact of neuroscience was potentially far-reaching, there were early

calls in neuroethics supporting the need for public dialogue, public engagement, and general increased public understanding of neuroscience (Safire 2002; Leshner 2005). Arguments were made that the challenge of the interpretation of neuroscience findings, especially those bearing on cognitive processes and personality, brought a conflict between the manifest and the scientific images of man (read: humankind) following Sellars' distinction (Sellars 1963). The public's perspectives and interpretations in the forms of neuroessentialism or neurodeterminism are therefore of importance, since they capture an interpretation of how the manifest and scientific images are negotiated (Illes and Racine 2005). Whether these interpretations are justified or not, or based on solid neuroscience and sound philosophy, the public's deciphering of them would matter as such and would need to be considered.

Neuroethics as a Hub of Research on Media, Science, and Public Engagement

Third, and in response to calls for public engagement, neuroethics has given considerable attention to topics related to public engagement, public understanding of neuroscience, and the media. In a review focused on the early years of neuroethics, this topic was found to be frequent in peer review literature and also in print media reports about neuroethics (Racine 2010). The number of relevant papers is of course too numerous to list or review here (a more comprehensive review has been offered elsewhere (Racine 2011)), but a few important results illustrate domains where progress has been made (see Table 92.1).

Contributions on Neuroscience and the Media

The following contributions in this *Handbook of Neuroethics* by Forlini and colleagues, Krahn, and Savane offer a clear representation of recent work in the area of media and neuroethics and address some of the points discussed above. Forlini and colleagues in a chapter entitled ▶ [“Popular Media and Bioethics Scholarship: Sharing Responsibility for Portrayals of Cognitive Enhancement with Prescription Medications”](#) (Chap. 93) approach the roles of the media in debates about cognitive enhancement using prescription medications. They examine how the media may have had upstream implications on bioethics scholarship as well as downstream consequences (e.g., on prevalence rates for the use of prescription medications). Their analysis highlights some problematic aspects of media coverage of cognitive enhancement and how some of these trends have percolated to academic scholarship without sufficient scrutiny. They call for greater awareness of the impact that the media and bioethics scholarship have on such debates and identify questions to address with respect to conventional and social media in the context of cognitive enhancement.

Krahn in his chapter titled ▶ [“Traumatic Brain Injury and the Use of Documentary Narrative Media to Redress Social Stigma”](#) (Chap. 95) introduces a critical note about how neuroethics is unfortunately often depicted narrowly by its critiques to exclude

Table 92.1 Illustrative (non-exhaustive) areas of research related to neuroethics in media**Media content dissemination and public portrayal of neuroethical issues**

Examination of neuroethical questions and topics such as cognitive enhancement (Coveney et al. 2008; Williams et al. 2008; Forlini and Racine 2009; Partridge et al. 2011)

Examination of media portrayal of neuroscience technologies and neuroscience results such as fMRI and DBS research and related ethical discussion (Racine et al. 2006, 2007a, 2010; O'Connell et al. 2011)

Examination of media content regarding ethical aspects in neurological disorders and mental illness such as coma (Wijdicks and Wijdicks 2006a, b) and the vegetative state (Racine et al. 2008; Striano et al. 2009)

Media impact and understanding of behavior regarding neuroethical issues

Examination of practices and regulatory issues surrounding direct-to-consumer advertising regarding neuroimaging, dietary supplements, and neuropharmacology (Illes et al. 2003; Illes et al. 2004; Racine et al. 2007b)

Examination of the impact of media content on attitudes toward cognitive enhancement (Forlini and Racine 2012)

Examination of the impact of neuroessentialism and neurorealism on neuroscience explanations (McCabe and Castel 2008; Vohs and Schooler 2008; Weisberg et al. 2008)

Nonconventional media and multidirectional communication in neuroethics

Proposal of models for public engagement regarding neuroethical issues (Blakemore 2002; Rose 2003; Racine et al. 2005)

Experiences in multidirectional communication (Illes et al. 2005)

Proposal for training programs in neuroscience communication with relevance to neuroethics (Illes et al. 2010)

considerations related to culture. Inspired by a pragmatic view of neuroethics where public and intercultural neuroethics hold major importance, he offers an insightful analysis of stigma and public misunderstandings in the context of traumatic brain injury where “hidden disabilities” and the “brain” aspect of the injury and related impairments can augment stigma. Krahn then explores a series of novel approaches such as narrative-based strategies and new media to combat stigma.

Savane presents in her chapter, appropriately titled ▶ “[Neuroethics Beyond Traditional Media](#)” (Chap. 94), an overview of nonconventional media and public engagement. She focuses on the rich and diverse European neuroscience environment which has witnessed a series of national and European-level initiatives such as *Brains in Dialogue* and *Meeting of the Minds*. These initiatives and the discussion by Savane invite us to consider how public engagement can be part of every aspect of neuroethics: from defining and understanding the issues, to envisioning responses. Although multidirectional communication and public engagement initiatives do not replace traditional media, they respond to a need to broaden public discussion and allow the mutual enrichment of perspectives.

Future Directions

The chapters on media and public engagement in this book meaningfully contribute to the critical investigation and discussion of media in neuroethics and

neuroscience. Still, there are important questions which have been untapped in our field. For example, Table 92.1 presented above is silent on the process of “media content development.” This is an essential area in media studies that has not been fully considered in the context of neuroethics. For example, how is media coverage of neuroethics developed? How do neuroethicists engage with the media and why? How do journalists understand neuroethics and what prompts them to write about these topics? Who gets to talk and obtain coverage and who does not? How are decisions to include or exclude ethical considerations from the reporting of neuroscience research made? These are questions that would call for further attention to understand how the field of neuroethics can contribute to an enlightened public dialogue and a strong representation of matters of ethics in public discussions. Media analysis and discussions about public engagement have been rather well represented in neuroethics scholarship; yet, there is much to be done to push the field further both in scope and depth. In terms of scope, we need replication studies and further comparative work to build on initial studies. In terms of depth, we need to better understand, based on theoretical and empirical contributions, the full cycle of media information development and its relationship to neuroethics. This would involve approaches such as normative models clarifying the responsibilities of neuroscientists in public communication, conceptual clarifications of the impact of public information on neuroethical issues, and tighter empirical work to understand the precise impact of public information on behavior. I hope that readers of this book will find the following contributions stimulating and that the latter will encourage more work in this area.

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Cross-References

- ▶ [Neuroethics Beyond Traditional Media](#)
- ▶ [Popular Media and Bioethics Scholarship: Sharing Responsibility for Portrayals of Cognitive Enhancement with Prescription Medications](#)
- ▶ [Traumatic Brain Injury and the Use of Documentary Narrative Media to Redress Social Stigma](#)

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