

Press releases as medical knowledge

Making news and identification
in medical research communication

Karolina Lindh

Medical knowledge about the brain is not confined to labs, clinics, or the neuroscientific community. Neuroscientific research about the brain has gained explanatory value for many challenges that confront contemporary society and humans today. The increased public interest in this medical knowledge is noticeable in the publication of popular science books about neuroscience in recent years (for example, Aamodt & Wang 2008; Damasio 1994; Seth & Frith 2014). Another way in which medical knowledge about neuroscience circulates to reach wider audiences is in the shape of press releases. These briefly describe the results of studies, and commonly they also address what consequences the particular study may have for future treatments. In a scholarly setting, the publication of a paper implies that findings are made public (Borgman 2007, 48). This way in which findings are made public does however not necessarily mean they are easily accessible or comprehensible by people with no medical training. The writing of press releases, published in a variety of ways and actively promoted by university public relations officers, is designed to make findings available to the general public. The distribution of a press release may lead to a number of events, and publicity for the university or individual

researchers if it catches the attention of news media. Although scholarly journal articles and scientific press releases may report findings from the same study, the ways in which this is done in these two genres is very different.

The business of translating the content of peer-reviewed journal articles into press releases intended for wider audiences than the scientific community often involves communication professionals. This group of professionals has grown in size at universities and academic institutions in recent decades, and has come to play an important role in representing their universities and the research done there to external audiences (for example, Hansson 2005). This work may involve a variety of activities and forms of science communication, among which the writing and distribution of press releases is one. It is not uncommon for press releases to be published in the news media exactly as they are written by university communication professionals, without any additional work or contextualization (Autzen 2014)—that is, the text read by the public is often the press release written by university communication professionals (Hansson 2017).

The aim of this chapter is thus to discuss how medical knowledge is adapted in the making of press releases, inspired by a particular field in the discipline of information studies concerned with what information artefacts such as books, articles, records, and other kinds of media do when they are embedded in sociocultural contexts and activities, and what people do with such information artefacts (Buckland 2012). Press releases can be seen as one kind of information artefact, which in addition to conveying a particular content also shapes activities and interaction between the parties involved in the writing and reading of these texts.

Method and material

The study is based on material gathered through semi-structured interviews with seven communication professionals and four neuroscience researchers working at medical faculties at two Swedish

universities. The interviews lasted between 30 minutes and an hour. Some of the interviews were done by phone due to geographical distance between the author and the interviewee. The interviews concerned outreach activities and science communication in general. Press work and press releases were one theme included in the interview guide. Commonly, interviewees brought up this themselves before being asked about it. Press releases turned out to be something that all but one informant had some experience of or thoughts about. The press releases that were discussed by interviewees all reported medical scientific findings, and were written by communication professionals employed at medical departments or faculties at the two Swedish universities where the informants worked. These press releases have a characteristic form. The introductory sentences commonly state the name of the journal in which the reported findings have been published and the author's affiliation. They also include a link to the original journal article where the findings have been published, and the researchers' contact information. The findings and their implications are described briefly, and it is common to include quotes from interviews with the author of the journal article, and often a portrait image of the author, or, in cases when neuroscientific findings are reported, images of cells or brains.

The interviews were recorded, transcribed, and coded. The first round of coding identified the occurrence of broader, reoccurring, empirical themes. For this study, the press release theme was singled out and coded in further detail. Reoccurring themes identified were (i) how interviewees talked about findings in terms of breakthroughs; (ii) news; (iii) the importance of not promising too much; and (iv) the importance of encouraging the audience to identify with what is being reported. These themes will structure the empirical part of this chapter, exemplified by quotes from eight of the interviewees, duly anonymized—four communication professionals (Anna, Mary, Tom, and Sara) and four neuroscience scholars (Linda, Peter, Patricia, and Ivan). It should be noted that the focus is the communication professionals' and researchers'

thoughts about press releases and their experiences, and the chapter does not aspire to gauge the audience's thoughts about or understanding of the press releases.

Genres as social action

Genre theory offers a useful approach for teasing out the disparities and similarities between various kinds of texts and what they are intended to achieve. The notion of genre can be understood in different ways, as referring to literary genres or more broadly to communicative activities (Andersen 2008, 2015; Kjellberg 2009). The latter notion, which is how genre will be used here, encompasses an understanding of genres as social action. Medical knowledge is communicated in many different ways, such as peer-reviewed journal articles, popular science books, blog posts, newspaper articles, and many more. These genres may be intended for different audiences and have different aims. Thinking of genres as communicative activities sheds light on how genres, in addition to facilitating the writing of texts, also enable their interpretation, setting out the connection between acts of writing, reading, and interpretation and other activities (Andersen 2015; Miller 1984). The conventions of a particular genre are not only applied when texts are written, but also when texts are read and made sense of. Understanding a text is not merely a matter of understanding the words; understanding also requires readers to grasp the conditions and situation in which a particular text was created. Through a shared understanding of how a genre is used and interpreted communicative activities are achieved. Hence, this understanding of genre implies that it is not only a way of representing content, but also a facilitator of social action. Genre is connected to particular communicative activities in which both writers and readers take part (Andersen 2015, 4). Genre theory draws attention to how content is mediated and the situations in which it is mediated, in addition to the form of the content. Sara Kjellberg's genre theoretical framework (2009) differentiates between four aspects of genre: aim, form, content, and context. Although they occasionally

overlap, they are useful when identifying differences between types of texts. *Aim* refers to the purpose of the communicative act, that is, the intended purpose of the communication. *Form* refers to the ways the text is structured in such a way as to achieve the senders' intentions and the way in which the aim is conveyed. *Content* refers to what the text is about. *Context* concerns whom the communicator engages with and where communication occurs (Kjellberg 2009). This also involves communication in the contexts where particular texts are made. How the aspects of genre are manifested may vary over time, changing relative to transformations of the practices in which it is used. In this chapter, the insights of genre theory will be used to illuminate the differences and similarities between the genre of press releases and other related genres such as scholarly articles and news reports, as well as notions of what kind of communicative activities press releases are associated with. The context in question is the university, since this is where the communication professionals and researchers interviewed work.

Peer-reviewed journal articles and popular science

Though press releases can report any number of things, the ones discussed here concern medical scientific findings. Scholarly publications and popular science figure in many forms of publication, but are genres that in different ways are connected and related to press releases. The main features and differences between them will be identified in the light of previous research.

Scholarly communication is an established research field in information studies which encompasses the study of the writing, distribution, use, and citation patterns of scholarly publications (Borgman 2007; Cronin 2005). Though this research area may include both the formal and informal communication of research, the emphasis has primarily been on the exchange of ideas between scholars, although science in a number of formats is increasingly available to larger audiences, partly due to digital technologies (Borgman 2007, 48–9). Insights from this field of research provide

a useful baseline for the aim, form, content and context of peer-reviewed journal articles. Scholarly publications may have different forms depending on the researcher's field, and the importance of different kinds of publications and genres vary between disciplines (Cronin 2005). In medicine, the discipline in focus in this chapter, the peer-reviewed journal article is the most important of all publications. The language of these publications is technical, and the intended readers are other medical scholars in the same research field. Whatever they publish, it must have the correct critical apparatus that connects it with previous publications in the field (Latour 1987), and new findings must similarly be presented in a way that connects with the established knowledge in the discipline (Borgman 2007, 47). The context in which articles are written and read is primarily an academic one. Bernd Frohmann (2004) has suggested that peer-reviewed journal articles are not only carriers of epistemic content, they also stabilize scientific fields and practices.

Previous studies of popular science writing, science journalism, and press releases have highlighted how scientific findings in these styles of writing differ from the conventions of writing for peer-reviewed journals.¹ These studies offer plenty of insights into aspects of popular science genres, although they have not applied genre theory. Many describe the form and content of popular science writing as featuring a sensationalist language not used in scientific journals (Fahnestock 1998; Johnson & Littlefield 2011; Nelkin 1996; Sismondo 2010). Sensationalist language may for example entail the use of superlatives such as the fastest, newest, and biggest, which was a recurring feature of science journalism throughout the twentieth century (Nelkin 1996). It is distinctive of popular science that writers adapt their message or information in such a way that it relates to values already held by non-expert audiences (Fahnestock 1998). This encompasses the identification of aspects that make findings attractive to readers who are not specialists in the particular area by appealing to wonder and how the findings can be applied. Jeanne Fahnestock (1998) suggests that popular science writing is about foregrounding certain aspects of

the findings, and not about replacing technical terminology with words that are easier to comprehend. One technique is to frame findings in terms of breakthroughs (Fahnestock 1998). Such studies centre specifically on the language used in popular science, on the text itself, and not on the practices or the people or professionals involved in the writing. Narratives about science for public channels are not only a matter of conveying the results of particular studies, however, because they connect to larger issues and contribute to a sense that research and science can offer solutions to societal problems (Felt & Fochler 2012). Although written for readers who are not experts in the subject area, public accounts of science not only have consequences for the public's expectations of researchers, they also have consequences for how younger generations of specialists think of their role as researchers and what they see as important (Felt & Fochler 2012). Ulrike Felt and Maximilian Fochler (2012) suggest that the various kinds of activities that constitute science communication should be understood to be about creating and maintaining good relations between society and science.

Press releases

I discuss the aim, form, content, and context of the press releases based on four recurring themes identified in excerpts from interviews with public relations officers and senior researchers in the area of neuroscience. The first and second concern how findings are described in terms of news and breakthroughs; the third, making findings appear interesting to non-experts without instilling too much hope among patient groups; and the fourth, the significance of facilitating the reader's identification with the contents of the press release. Although overlapping, these themes are useful when pinpointing how medical knowledge is transformed as it circulates between practices.

News

Medical press releases may be intentionally addressed to particular audiences such as the media for medical professionals or other groups in healthcare settings. Most, however, are intended for media with broader audiences, and it was common for communication professionals to talk about the content of press releases as news.

Anna: Research is like ready-made news, we don't have to make up strange investigations like other organizations may do. We have real news. That is something we see as a strength, then [our job] is about relating science and giving journalists support in writing about our researchers and what our researchers do.

Whether scientific findings really are news, how science and news relate to each other, and the similarities of 'science news' to other kinds of news can be discussed. Nik Brown (2003, 15) has stressed that science reports in the media differ from the common run of news. For something to qualify as a news story, it must report something that is both recent and has not been heard of before. What is reported in scientific publications, though, must connect to what is already known in the academic field in question (15). Brown writes that 'It is in fact extremely rare for something completely new to find its way into *Nature* or *Science*. Scientific news is more usually old news' (15).

The contexts of science and news reporting differ from each other. Rather than being out there, happening or being found, science news is constructed as such by journalists (Ideland 2002). Yet science news differs from other kinds of news such as reports on political events or decisions, for while that kind of news has a limited time frame, science news does not (44). With news only being news for a limited period of time, the implication is that journalists must work fast (Ideland 2002). The work that public relations officers do on press releases matches the pace of science journalism: they work fast and try to introduce findings in a concise manner that

appeals to the media or the public. The interviewees emphasize the importance of fitting the science they report to these outlines. One of the communication professionals described the work involved in the distribution of press releases in the following way:

Mary: —and then we discuss, how do we distribute this? This is really interesting, we should try to get it into [one of the larger news programmes on Swedish Television], this has potential... then you call [the news programme], one of the reporters, and say that we have this research, is that something [of interest], and you explain in a simple and fast manner what it is about. Yes, we are [they say], and then I send them the documentation, and at the same time I send it out widely and publish it on [the university's] website so when people hear about it on the news... they can always access the source. Because it can become distorted along the way. Irrespective of which channel, if we distribute [the press release] widely or do it more narrowly we always make sure that it is published on [the university website] at the same time, a text we can vouch for.

One of the points of a press release and the work surrounding it is to communicate science to audiences outside academia. Mary, a public relations officer, also touches on possible misrepresentations when it is picked up as 'news' by television, radio, or other news media. The same findings may be shaped to suit a different genre in a news context where texts adjust to other conventions of form and content. Something 'very exciting' may be misinterpreted, becoming something the academic institution may not want to be associated with. To maintain the connection to the academic context, this particular university makes sure that the original text is readily accessible on its website at the same time as the research features in the news. It is important to communication professionals and researchers alike to reduce the risk of misrepresentation, yet the composition of press releases requires the findings to be framed in certain ways in order to attract media attention.

Breakthroughs

Previous studies of the popularization of science have discussed how findings are conceptualized in terms of breakthroughs, or the possibility of describing findings in terms of a breakthrough (for example, Fahnestock 1998; Nelkin 1996). Attention is recognized by many interviewees in this study as an important factor in the press release genre, and by researchers as a reason why some findings gain publicity and others do not. Linda, a researcher, accepts this about press releases, and thus adjusts her involvement in making press releases, shaping their form and content, in accordance with what she finds appropriate. Not every study qualifies for the label of breakthrough, but in the writing of a press release acquires it en route, as if an unavoidable element of the genre. She therefore chooses her moment to go public with care.

Linda: Sometimes you see press releases [about a colleague's work], studies that are actually quite uninteresting, about minimal progress, but that are emphasized in press releases as super interesting, and then the media take that as a starting point and write about it while you yourself know that this isn't really a breakthrough. In the media everything is a breakthrough, but in reality research doesn't work like that; not all studies lead to breakthroughs.

She touches on the tension between the way research is done and how the news media operate. There is something to process that means that breakthroughs figure more prominently in the press releases than they do in the research. Although Linda does not necessarily agree with this way of handling research findings, she is aware it is a feature of press releases that will contribute to its impact in the media. She knows what sort of communicative activity is intended, and what adaptations to the findings it requires. When Tom, who is a communications professional, describes which publications and findings are selected for press releases, he explains that the

scientific community's evaluation is one important aspect, but not the only one taken into consideration. He talks explicitly about the importance of the findings being a breakthrough as a 'news hook' to catch the interest of readers. Indeed, his description highlights how important it is to know how press releases are both written and read in order to achieve their intended communicative activity.

Tom: ...and then I also have to see that there is a news hook, that there is a hook as it's called, something to attach the message to. And most commonly, the easiest way, is something like a breakthrough that is as close to the clinic or to a new treatment or therapy as possible.

The way Tom talks about news hooks echoes the features of popular science identified by Fahnestock (1998): it is not merely a matter of describing the findings in a non-technical manner, but of identifying the points that will give the message the greatest appeal to the intended audience. That the findings are considered a significant contribution to the field is one thing, but it is not the same thing as a news hook. One way to catch people's attention can be to emphasize closeness to a clinical application. An important feature of press releases is that in addition to announcing findings in a way that make them easy to comprehend, they also seek to generate exposure for the university (see Hansson 2005). Being very short, press releases are not the place for elaborate explanations of the findings, and certainly not in the detail one would expect to find in a research report.

Sara: You can always tweak a little, and you always tweak a bit when you do a news angle because the headline must raise interest otherwise nobody will read [the press release]. You can't give the title of a dissertation as a headline but there must be some limits, not least when it concerns medicine, health, people's health and how people feel, there is a boundary when you have tweaked too much.

Like the other communication professionals interviewed in this study, Sara is cautious not to raise unrealistic expectations in patients (see Alftberg in this volume). Yet the rewriting of medical scientific findings as a press release necessarily involves some manipulation, some shifts in focus compared to the original publication. The job of the press release is to reach out and be read by non-experts, meaning that the structure and content of the two genres are very different.

The writing of press releases is accordingly one of adapting established medical knowledge in an academic field to the conventions of news reporting. There are recognized limits on how much recasting is acceptable, as noted by several of the communication professionals who were interviewed. These boundaries are handled by balancing the appeal to readers with avoiding high expectations among readers and patient groups.

Striking a balance

Choosing words and metaphors is a delicate issue when it comes to writing about medical advances. If a press release exaggerates or uses sensationalist language it may carry over into any news reports (Sumner et al. 2014). Much of the content and form of the popular science genres identifiable in previous studies does coincide with that highlighted by interviewees in this study. Excessive claims about the consequences of findings can be particularly problematic when press releases concern medical research, as the result can be hyped expectations among patient organizations and relatives that may not be met (Brown 2003). Audiences can perceive the same press release in differing ways: researchers, press officers, and patients' relatives may have very different understandings of what constitutes hype in a press release that reports medical science (Samuel et al. 2017). The communication professionals in this study acknowledge that the way knowledge is represented in press releases differs from the way the same findings are presented in journal articles. However, they are not indifferent to what this may entail, and particularly how the findings they describe might

be interpreted and understood by patients. Striking a balance between giving findings general appeal and not instilling expectations that are too high is important. Much neuroscientific research is experimental and difficult for non-experts to grasp. Tom says that such research requires him to find a good angle—a suitable metaphor when describing the findings. Commonly, this angle will be the research's closeness to some new clinical application, but 'it is also very much about not creating too much expectation among patients. That is a key issue, to strike a balance each time, and that's something that you learn to calibrate, to stick to the right side of that line' (Tom). Communication professional Mary admits that mistakes are made, and gives a few examples of a lack of balance when writing press releases.

Mary: We have made occasional faux pas, you make mistakes sometimes when you promise too much [...] we may create enormous expectations among a group that suffers from severe illnesses and we shouldn't do that. We try to work [on that] and that is an act of balance, on one side trying to write something that carries a news value, and on the other make it interesting, and you are supposed to do that on an A4-sized page and simultaneously not instil expectations that are not realistic.

Writing a press release includes weighing up possible news values—what the public might find interesting—against the risk of raising expectations among patients and relatives that cannot be met, and doing all that in a very limited space.

Linda was one of those who made the point that reaching out to audiences outside academia requires a way of talking about research that is nothing like the conventions of scholarly publications. Likewise, Peter, another researcher, is aware of this, but chafes at the fact that this feature of press releases precludes an accurate account of research practice and the production of medical knowledge:

Peter: If you were to search for Parkinson's disease on [the university's] website you would find that Parkinson's enigma has been solved like 50 times here...

Author: You mean it has been written in that way?

Peter: Exactly, [inaudible] that's because that's the only way to reach out with your research and make someone interested in it. No one cares that we've taken a small step in Parkinson's research that will eventually, like in 50 years, contribute to solving the Parkinson's puzzle.

According to Peter, striving for visibility may lead to public pronouncements in which levels of certainty and research outcomes no longer correspond with what has actually been achieved. If this is the case, the writing and distribution of press releases is not primarily about accounting for findings, but a means for the university and researchers to gain visibility (for example, Samuel et al. 2017). In the science setting the findings may be a step forward, an advance on what is already known, but this may not be sufficient to garner public interest. Public attention, according to Peter, requires the exaggeration of both the issue investigated and the resultant findings. For one researcher, Patricia, who works in a lab far from the clinic and its patients, it may take time for findings to result in actual treatments and applications, yet she has a great deal of contact with patients, particularly following press releases.

Patricia: We had a publication in 2014 and a press release was made based on it. People still write and call to find out if they can test a new treatment and to find out what we are going to do now. I try to answer everything but sometimes I forget. In the beginning, I found this to be difficult. I thought, what are we supposed to say now? What if they interpret this in the wrong way? What if their expectations are exaggerated? Now I'm completely calm in this role, no severe consequences have resulted from my statements.

Patricia's reflections suggest that some experience is required in order to fully comprehend and handle the different communicative activities that the various genres generate. The literature describes press releases as partly responsible for raising unrealistic expectations among patients (for example, Brown 2003). That aspect to press releases does appear to be something that both communication professionals and researchers do their best to avoid, because they know what consequences it may have for patients. However, it might be impossible to completely avoid raising patients' hopes when doing research on human diseases (see Alftberg in this volume). That might not even be desirable. For patients and their relatives, hope may be a way of imagining a future (Nilsson & Hansson 2016). The quote from the interview with Patricia illustrates how press releases can also trigger or facilitate a dialogue between researchers and patients.

Identification

Which findings researchers may find interesting and which appeal to the news media and the public may differ. Responses from media may be wholly absent—or overwhelming. One of the interviewees, Ivan, expected as a researcher that a press release about a study he was involved in about the onset of Huntington's disease would gain far more public attention than it did.

Ivan: ...[we thought that] this will be really exciting, we could say that now we know why the onset of Huntington's disease occurs early or late [in a patient's life]. No, [a Swedish medical journal] wrote about it, that was that. Nobody else was interested, and then we thought is this too complicated? Is it too nerdy? Is Huntington's disease too unusual? Had it been Alzheimer's, would we have received more attention?

While the research group on this occasion considered their findings to be a major breakthrough, a considerable advance on what was

known about Huntington's disease, the interest from the media was very low. Ivan wonders if the lack of interest is explained by Huntington's disease being rare; had their findings concerned the onset of a more common disease the response might have been different. Although by his account their findings did have what can be described as the makings of a breakthrough, the findings lacked relevance for a larger public. Being a breakthrough may thus not be sufficient for a finding to make a successful news story. Identification is an important feature in both science journalism and marketing, which may be achieved by evoking culturally established values. Popularized accounts or potentially controversial research seek to gain the approval of both the public and research funders (for example, Hansson 2005, 2006). Identification also appears to be central to the press release genre in terms of content. When reasoning about which press releases attract the media and public attention and which do not, the factor mentioned by both public relations officers and researchers was the bearing the findings in question had on something familiar to the public. The researchers' understanding of what deserves public attention does not necessarily coincide with what the general public can relate to or identify with. In Ivan's example, Huntington's disease may have been too rare for the press release to attract any wider publicity outside the medical professional community. On other occasions the media and public response can come as a surprise. Peter did not think the findings announced in his most recent press release to be particularly important, far less of any interest to audiences beyond the research community.

Author: What happened the last time you did a press release?

Peter: Well, the last time we did one it gained lots of visibility [...] it was an experimental study, but the public relations officer put a very catchy title on the press release and that led to it gaining attention in the US. It was not widely distributed in Sweden, no news agencies or anything wrote about it. But in the US it was widely distributed.

The title chosen by the communication professional hinted that the findings could potentially make people smarter. Peter ascribes the attention the press release received not to the actual findings it reported, which according to him were minor, but to the catchy title chosen by the press officer that struck a chord with the public.

In addition to inherent newsworthiness, the intended readers' ability to relate to the message of the press release appears crucial to its ability to attract public interest. In other words, rather than announce something as completely new, an effective press release will make the findings sufficiently recognizable to fit with what is already familiar to the expected audience. In the genre of medical press releases, the content element is not merely a matter of accounting for breakthroughs or 'newish' findings in order for communication to be successful.

Conclusions

Although there may not be any firm boundaries between the scientific community and the public, there are differences in the genres used when communicating findings among researchers and audiences who are not medical experts. Genres differ in form and content, they do not have the same aims, and they are intended for a variety of contexts (Kjellberg 2009). The examples and material discussed here illustrate how medical knowledge adapts as it circulates between research practices and the practice of writing press releases. The differences between the genres used in these contexts demand adaptation.

The communication professionals and researchers interviewed in this study generally have a shared understanding of the kind of communicative activities that press releases are intended to achieve when reaching out to non-academic audiences via the media. They also have a shared understanding of how research must be shaped in style and content in order for this to happen. In the interview material discussed above, press releases are described as connecting audiences and researchers based on scientific findings, the conventions of news reporting, and things familiar to non-experts.

Thinking in terms of genre as a communicative activity, the themes and examples considered here illustrate how press releases differ from academic publications in form. Press releases are clearly associated with visibility, accounting for something supposedly new yet familiar enough to make non-experts interested. The success of a press release does not depend on the importance ascribed to the findings by the research community, but on how well the reported findings could be represented in a way that corresponded with something the intended audience could relate to. One way of describing the work of writing press releases is that it is about taking findings designed to slot into the existing knowledge in an academic field and adapting them to the conventions of news reporting in terms of both content and form, reflecting their move into a different context, from scholarly publication into the news media.

Turning medical knowledge into press releases is not unproblematic. Points of tension are evident in the interviewees' reflections on the necessary negotiations when presenting findings in press releases, whether between research practice and how the news media works, and what each demands in order to be successful, or between an eagerness for visibility and a fear of building exaggerated expectations. When a balance is struck, however, a press release may not only operate as a mediator of visibility, but can also facilitate dialogue between researchers and patients. Scientific press releases constitute one kind of document that reports on popular science, retaining their ties to the scientific process by their connection to the original peer-reviewed publication of the findings, but also to the lives of non-scientists by accommodating the content, context, form, and aim in ways that non-experts can identify with.

Notes

- 1 This theme has been discussed by researchers from a variety of disciplines, for example STS (for example, Brown 2003; Felt & Fochler 2012), ethnology (for example, Hansson 2005; Ideland 2002), rhetoric (for example, Fahnestock 1998), literature (for example, Johnson & Littlefield 2012), and others (for example, Nelkin 1996; Sumner et al. 2014)

References

- Aamodt, Sandra & Samuel Wang (2008), *Welcome to your brain: Why you lose your car keys but never forget how to drive and other puzzles of everyday life* (New York: Bloomsbury).
- Andersen, Jack (2008), 'The concept of genre in information studies', *Annual Review of Information Science & Technology*, 42(1), 339–67.
- (2015), 'What genre theory does', in id. (ed.), *Genre theory in information studies* (Bingley: Emerald).
- Autzen, Charlotte (2014), 'Press releases—The new trend in science communication', *Journal of Science Communication*, 13(3), Co2.
- Borgman, Christine L. (2007), *Scholarship in the digital age: Information, infrastructure, and the Internet* (Cambridge, MA: MIT).
- Brown, Nik (2003), 'Hope against hype—Accountability in biopasts, presents and futures', *Science Studies*, 16(2), 3–21.
- Buckland, Michael K. (2012), 'What kind of science can information science be', *Journal of the American Society for Information Science & Technology*, 63(1), 1–7.
- Cronin, Blaise (2005), *The hand of science: Academic writing and its rewards* (Lanham, MD: Scarecrow).
- Damasio, Antonio R. (1994), *Descartes' error: Emotion, reason and the human brain* (London: Picador).
- Fahnestock, Jeanne (1998), 'Accommodation science: The rhetorical life of scientific facts', *Written communication*, 15(3), 330–50.
- Felt, Ulrike & Maximilian Fochler (2012), 'What science stories do: Rethinking the multiple consequences of intensified science communication', Department of Social Studies of Science, University of Vienna, December. <http://sciencestudies.univie.ac.at/publications>
- Frohmann, Bernd P. (2004), *Deflating information: From science studies to documentation* (Toronto: University of Toronto Press).
- Hansson, Kristofer (2005), 'Biopop: Bioteknikens popularisering i medierna', *ETN: Etnologisk skriftserie*, 1(1), 107–117.
- (2006), 'Den aktiva familjen i hälso- och sjukvården', in id. (ed.), *Etiska utmaningar i hälso- och sjukvården* (Lund: Studentlitteratur).
- (2017), 'Mixed emotions in the laboratory: When scientific knowledge confronts everyday knowledge', in Kristofer Hansson & Marcus Idvall (eds.), *Interpreting the brain in society* (Lund: Arkiv).
- Ideland, Malin (2002), *Dagens gennyheter: Hur massmedia berättar om genetik och genteknik* (Lund: Nordic Academic Press).
- Johnson, Jenelle M. & Melissa M. Littlefield (2011), 'Lost and found in translation: Popular neuroscience in the emerging neurodisciplines', in Martyn Pickergill & Ira Van Keulen (eds.), *Sociological reflections on the neurosciences* (Bingley: Emerald).
- Kjellberg, Sara (2009), 'Scholarly blogging practice as situated genre: An analytical framework based on genre theory', *Information Research*, 14(3).
- Latour, Bruno (1987), *Science in action: How to follow scientists and engineers through society* (Cambridge, MA: Harvard University Press).
- Miller, Carolyn R. (1984), 'Genre as social action', *Quarterly Journal of Speech*, 70(2), 151–67.
- Nelkin, Dorothy (1996), 'An uneasy relationship: The tensions between medicine and the media', *The Lancet*, 347(9015), 1600–1603.
- Nilsson, Gabriella & Kristofer Hansson (2016), 'Berättade fantasier om förr, nu och framtiden i vården av barn med diabetes', *Socialmedicinsk tidskrift*, 93(3), 261–70.

- Samuel, Gabriell, Clare Williams & John Gardner (2017), 'UK science press officers, professional vision and the generation of expectations', *Public Understanding of Science*, 26(1), 55–69.
- Seth, Anil & Chris Frith (2014), *30-second brain* (Sydney: Pier9).
- Sismondo, Sergio (2010), *An introduction to science and technology studies* (Chichester: Wiley-Blackwell).
- Sumner, Petroc, Solveiga Vivian-Griffiths, Jacky Boivin, Andy Williams, Christos A. Venetis, Aimée Davies, Jack Ogden, Leanne Whelan, Bethan Hughes, Bethan Dalton, Fred Boy & Christopher D. Chambers (2014), 'The association between exaggeration in health related science news and academic press releases: retrospective observational study', *BMJ*, 349:g7015.