

1 INTRODUCING

Kat Jungnickel

HOW DO YOU MAKE AND COMMUNICATE YOUR RESEARCH?

What does your research sound like? Do you yell or whisper it? How does it feel to wear it, close to the skin? Can you meter its rhythm? What games does it call for? Do you perform it? How do different modes of making and communicating inform your practice, shape your stories, and engage your publics? These are some of the questions at the heart of this book.

This edited collection focuses on *transmissions*, understood as the tactical combination of *making* (how theory, methods and data give shape to research) and *communicating* (how we show, share, and entangle others in it). It is the research moment where invention meets dissemination. Thinking about the making and communicating of research together is to expand the usual focus on methods. Here, we explore theoretically underpinned and cutting-edge creative and arts-based practice *with* thought-provoking representational forms and flows of research. Our collective interdisciplinary curiosity is sparked by the critical relationship these combined components offer for doing research differently.

Focusing on transmissions in this way, we argue, draws attention to a critically important part of the research process commonly overlooked and undervalued. While new and exciting methods have been gaining traction, discussion and debate about the tactics of transmission have lagged behind. Far less attention has been given to how the dissemination of research delimits what kind of research can be done. Yet, transmission is a crucial element of the process, equally creative and innovative. Collectively, in the twelve chapters that follow, we closely consider critical tactics for making *and* communicating research, because we see transmissions as integral to the changing contemporary research landscape. Laura Watts articulately sums it up: If you want different stories, try different machines.”¹ This book not only critically questions the research machines we regularly use but is packed with different kinds of machines for making and communicating different kinds of stories.

Transmission is commonly defined as “broadcasting, communication, diffusion, dissemination, relaying, sending out” (*Oxford* 2016, 967). While partly useful, this definition implies a far too easy distinction between the making of a thing and its movement out into the world (in contrast, for example, with more participatory communication cultures, such as those on YouTube—see Jenkins, Ito, and boyd 2016; Burgess and Green 2018). Some readers might see similarities to what have been termed *outputs* (especially in the current academic landscape, increasingly measured by publication). These often take the form, particularly in the social sciences, of journal articles, conference papers, and PowerPoint presentations.

The problem with *outputs* is that they tend to offset *inputs*, and as such, they separate the *what* from the *how*, temporally and materially. They suggest a linear process and end-point deliverable. The contributors in this book understand dissemination, or communication, of research as inseparable from its creation. To mark this close relationship, we speak of transmission. We take seriously the means and modes through which we make and communicate research and examine what emerges when the *what* and the *how* (as well as the *where* and the *why*) are understood as intimately tied. Far from operating as a point of closure, we explore how and in what ways research transmissions create openings and connections with and in social worlds.

Perhaps a better definition of transmission can be found in a machinic context. In a vehicle, transmission is a vital “mechanism by which power is transmitted from the engine to the axle” (*Oxford* 2016, 967). It is the gearbox in a car or the drivetrain on a bicycle. Here, transmission is intrinsic to the overall system, a means through which power is made and moves through the machine and how the machine moves. Critically, power doesn’t flow unheeded. Transmission affords bespoke control—of torque, speed, and direction. It translates a machine’s output, by adapting it to meet and respond to conditions at hand throughout the journey. There is also interplay in the form of friction and resistance. With this second definition we can think about research as machines that require various components, including transmissions, to work in shifting networks of relationships. It makes us consider how research travels, where it goes, and who and what is invited along the way. Transmissions in this sense implies that the formats and conventions involved in making and sharing knowledge cannot be clearly separated.

This is precisely why a focus on transmissions matters. As researchers we make choices all the time. These are the tactics of research. We are engaged in the creative and critical practice of making sense of complex social worlds through interactions with humans and nonhumans, an idea popularized in science and technology studies (STS) about heterogeneous networks of actors who share agency in sociotechnical worlds (Callon 1986; Latour 2007). Research is made and shaped by customized assemblies of interests, subjects, publics, theory, methods, tools, platforms, sites, skills, and materials. The breadth of options and combinations is vast. This is in part what attracts many of us to this form of scholarship. Yet, while radical experimental methodological projects flourish, it is far less common to see research made and communicated publicly in similarly risky cutting-edge forms. Findings are more often pressed into conventional outputs once research is complete (with standard layouts and fonts, limited imagery, PowerPoint frames, and truncated abstracts).

So, why are research transmissions in the social sciences typically so narrowly determined? Why, to use the machinic rubric again, are we stuck in one gear? What if the way we transmitted our research was just as imaginative and diverse as our choice of subjects, theory, and methods of study? How, to borrow from Bijker and Law (1992), could our research transmissions be “otherwise”?

These are some of the questions we examine in the following chapters. What happens, for instance, when, as Julien McHardy and I explore, we choose to make and communicate our research with an angle grinder? Or like Larissa Hjorth and Ingrid Richardson, we use games and play with families? If, as Laura Watts argues, we want new kinds of stories, we need to use different machines—and different machines imply different tactics of transmission.

(OTHER) MACHINES FOR MAKING AND COMMUNICATING RESEARCH

This book takes up the critical challenge to attend to other ways of what Howard Becker (2007) has termed “telling about society.” While familiar and dominant articulations of social realities do important work, he says that they “give a picture that is only partial but nevertheless adequate for some purpose” (3). The fact that customary forms of storytelling via talk and text effectively transmit findings to specific audiences is undeniable. But, as Becker argues, no one single instrument or tactic can tell an entire story, only pieces of it. There are many others, some of which are less familiar in our disciplines, that perhaps don’t fit so easily, that overlap or interrupt normative practice. Yet, these sometimes unfamiliar and unusual tactics of transmission have the most impact. Becker writes about how “experimenters and innovators don’t do things as they are usually done,” and that “their solutions to standard problems tell us a lot and open our eyes to possibilities more conventional practice doesn’t see” (7).

Research transmissions are becoming increasingly important. The availability of digital tools and social media platforms has greatly expanded subjects for study and along with them, the possibilities of making and communicating research in forms and formats beyond journal articles and monographs. A spectrum of choice is available to researchers. Of course, this shift is not simply a consequence of “new” technologies. Coupled with this is a growing desire to reach and interact with diverse publics and resist the pinning down and flattening of social life to study it. It is not easy. The challenge lies in how to “make and know realities that are vague and indefinite” (Law 2004a, 14) and “to account for the social world without assassinating the life contained within it” (Back 2012, 21). What has made this task even harder, as Christine Hine argues, is that many

of us have been taught to tidy up things that don't fit: "Our methodological instincts are to clean up complexity and tell straightforward linear stories, and thus we tend to exclude descriptions that are faithful to experiences of mess, ambivalence, elusiveness and multiplicity" (2007, 663).

Over the last decade, innovation in research has primarily focused on methods. Key examples include messy (Law 2004a), mobile (Büscher, Urry, and Witchger 2011), live (Back and Puwar 2012), inventive (Lury and Wakeford 2012; Marres, Guggenheim, and Wilkie 2018), digital (Orton-Johnson and Prior 2013; Marres 2017), video (Bates 2014), sensory (Pink 2015), creative (Kara 2015), speculative (Rosner 2018), and interdisciplinary methods (Lury et al. 2018), to name a few. This notable work offers imaginative alternatives to the blanket use of methods and actively resists the tidying of data methodologically. Yet, there are still many opportunities to intervene in the ways standard and familiar knowledge "outputs" work to tidy up messy and multiple realities and to question the idea that clear and direct finished arguments require reduced complexity. This book explores what happens when we keep complexity, mess, and ambiguity *in* the multiple representational knowledge objects that we put *out* there.

Engaging in this kind of practice presents unique challenges. Every discipline has established knowledge frameworks and systems, so entrenched in practice that they become invisible over time. Privileging some over others is not without consequences. Scholars have argued that some pervasive practices shape not only how we *do* research but also how we *think* about and *make* knowledge. PowerPoint is a primary example. This computer program is as ubiquitous in academia as it is in business and industry for the purposes of transmitting knowledge. Nina Wakeford argues that its "normative and normalising" process operates as a "site of ambivalence," because it both opens up *and* closes down communication (2006, 96, 94). Few pivotal knowledge frameworks that service our disciplines in these ways receive such critical attention. The paucity of discussion about how we make and communicate research suggests that how we show, share, and engage others with our ideas is separate or somehow inconsequential to the process. In this book, we follow Susan Leigh Star's (1999) argument that paying attention to things overlooked or underappreciated renders the landscape they inhabit visible, which in turn raises questions and creates space to summon into practice new ways of thinking and doing.

As a result, we employ the term *transmission* as a means not just of making and communicating research, but of bringing new social worlds into being. It is about thinking with and through things, not just using and describing them. This builds on an established idea in the social sciences about the power and politics of methods to construct realities (Savage and Burrows 2007; Law and Urry 2011). Every method furnishes different ways of seeing the world, and fundamentally shapes the findings. We also take seriously insights from STS about complexity and ontological multiplicity (Mol 1999, 2002; Law and Singleton 2015). Together these debates animate the idea that research can be “different things in different practices because it is being done or performed differently in those different practices” (Law and Singleton 2015, 7).

This is of course not to say that more conventional text and talk forms are not creative and valuable, and we do not seek to diminish the impact of such practices (this is a book after all). Yet, while there is considerable heterogeneity even within text—ideas that make it into essays and books have prepublication lives in fieldnotes, photos, lectures, presentations, papers, and more—the spectrum of outputs is much less varied. Many forms and formats have remained relatively unchanged for decades, while the social worlds they reflect have not. Our interest is in *other* means and modes for making and communicating research because they make explicit the intersections of invention and dissemination, which have not generated the debate and discussion they deserve.

To do this we focus on a range of multidimensional, experimentally sensory, and materially layered illustrative examples. In total, the collection features work by fifteen interdisciplinary authors who explore what new forms of knowing different kinds of transmission make possible. Together we critically examine a range of transmissions in research, paying particular attention to the *making* parts of the invention and dissemination process by exploring in depth the role of researcher-produced knowledge objects. In other work I have termed this “making things to make sense of things,” which recognizes the importance of practice in research and research in practice (Jungnickel 2018).

Although predominantly aimed at a social science reader, this book includes authors from art and architecture, anthropology, computing, design, media and communications, medieval studies, and sociology. While we frame our critical

reflections through our respective disciplines, we seek out shared experiences and responses arising from experiments with less familiar approaches in our fields. Together, we not only present, discuss, and perform transmissions, but we also think with and through them, critically and creatively interrogating what they do with and for the research, researcher, and researched. We call attention to the promise and limitations of these approaches, the possibilities of participation and engagement, the significance of various forms of data, ethics and accountability, and the temporalities and discomfort of doing research in public. Although the variety is vast, it turns out we have much more in common than that which divides us. And we can learn a lot from one another.

WHAT HAPPENS NEXT?

Much like the ethos of the events on which it is based, this collection presents various critical and creative work in practice.² It is primarily written with new scholars in mind, and this extends from those starting their careers to those experimenting with new ways of doing old things. We hope to stimulate and provide support for experimental research that pushes at disciplinary edges and perhaps even inspire unusual collaborations by revealing coherences in contrasting practices that might otherwise go unnoticed. For readers already doing this kind of work, the book offers a range of theoretical and methodological frameworks to further support creative research.

Each chapter focuses on a different tactic of transmission, such as poetry, play, sound, exhibition, creative writing, performance, catalogs, interactive machines, century-old costume, digital platforms, and more. As expected in an interdisciplinary collection, there is significant variation. Some authors toy with conventional forms just enough to evoke a fresh response. Others enact more radical shifts and, in the process, challenge themselves, peers, and participants. Some projects are site specific while others shift shape in and between museums and catalogs, toilet cubicles and sewing studios, shops and blogs, stages and bodies, remote beaches and social media. All involve some form of risk as they push researchers and research into new territories—sometimes physically

and personally, and often politically. These are not always comfortable positionalities. Yet, we attempt to “stay with the trouble” (Haraway 2016).

Readers will note that authors deploy a range of transmission tactics *in* their chapters. They put words, images, and experiences into different machines. Laura Watts discusses her academic practice in poetry. Bonnie Mak and Julia Pollack provide catalog cards to explore ordering systems of knowledge. Max Liboiron encourages readers to participate in an exchange. Nerea Calvillo slows her writing down to discuss slow data. Julien McHardy and I provide an instruction manual to build and operate enquiry machines. Kristina Lindström and Åsa Ståhl also provide instructions, for plastiglomerate picking and how to compost your own plastic waste. Sarah Kember creatively writes about creative writing. I include a scaled sewing pattern to invite readers into the many pieces of my 1890s cycling costume research. And there’s more. Chapters also point to online resources of photos, videos, manuals, more open access sewing patterns, and sound archives. As such, the following projects are contained on the page, but only just.

Chapter titles are similarly dynamic. They are all in the process of doing something—*writing*, *playing*, *enquiring*, *participating*, *listening*, *exchanging*, *writing*, *performing*, *making* and *wearing*, *slowing*, and *responding*. Researchers’ tactics of transmission are active, ongoing, and responsive to changing conditions and contexts. The use of *-ing* as a device for rendering action visible is not new. It has been put into service to signal similar dynamic processes (see Law 2004b; Lury et al. 2018). Here, we deploy it for the purpose of considering the dialogic exchange between researcher and researched, theory and practice, invention and dissemination.

A final point about the book’s structure. There are many ways of *theming* how authors in this book are thinking with, through, and about transmissions in their practice. Four overlapping categories are suggested below. While the nature of the printed page presses chapters into a linear flow, readers may find it more relevant to jump from chapter to websites, to project archives and back again.

CRITICAL DISCOMFORT

Writing research into a poem, pedaling it on a poorly welded machine, or wearing it as a costume is not always an easy or a comfortable positionality (this

is probably an understatement). Few are officially taught how to do this, and even if they are, these types of performances tend to interrupt the normative paper-delivery practice at a typical academic conference. And it is often physically as well as emotionally intense work. These tactics of transmission generate responses, the nature of which can vary widely, from awkward laughter and ontological confusion to generous applause and constructive debate. Being critically uncomfortable is part of this process.

In the opening chapter, “Poetry and *Writing*,” Laura Watts draws attention, in a poem, to the inherent poetics in academic writing. Her ethnographic research on renewable energy in Orkney, Iceland, and Denmark is animated in lyrical combinations and rhythms. While she is comfortable in this expression—“I was using a poetic apparatus as part of my terraforming experiment”—she notes how unsettling it can be for others. Who are you, they ask, when she engages in this practice: “Are you an academic over here, or a poet over there?” Questioning the radical changes to the social worlds that have been studied over time, she challenges why there have not been more changes in academic production: “If we have evolved our visual apparatus, like telescopes, since the enlightenment, why not our literary apparatus?”

In our cowritten chapter, Julien McHardy and I discuss attempts to physically construct a device that takes literally the idea of enquiring as machines with particular materialities and capabilities. We approach the question of “how making things can help us to make sense of things” with a range of tools and sites, such as angle grinders, welders, cable ties, backyards, and scavenged bike parts. The machines we make are far from neutral devices; they demand responses from operators and viewers alike, in street performances, academic conferences, and public events. They “elicit enthusiasm as well as awkwardness and discreet distancing,” and because they are unstable artifacts, the operator runs the risk of “losing one’s authority, for academic authority still rests on controlling one’s material, all claims to experimentation aside.” Nevertheless, we argue that “embarrassment too comes with analytical potential.”

My chapter on *making* and *wearing* research takes as its focus a collection of Victorian women’s convertible cycling costumes inspired by 1890s British patents. These reproductions are lively and dynamic storytelling devices—they convert from ordinary middle- and upper-class street wear to *extraordinary*

cycle wear via a series of mechanisms concealed inside seams and hems. As such, they need bodies to materially demonstrate the switch between multi-modal identities. Yet, wearing research like this is not easy. Multilayered woolen costumes are often hot, sometimes embarrassing, prone to malfunction, and in need of ongoing maintenance. I explore what making and communicating research in intimate three-dimensional form brings to an understanding of mobility cultures, gendered relations, and citizenship, and how performing with and (literally) in research thickens connections between the past and present.

PUBLIC-MAKING

Research is a situated practice, placed and defined in relation to contexts. Analysis and “writing up” is not nearly so clearly located, visible, or socially engaged. The pressing of research into journal or book form predominantly happens behind the scenes. When findings reach publics, arguments appear polished, with much of the ambiguity and mess tidied up or erased. The modes and means of transmission in this collection are far less firm or finished. In many cases they render visible live and dynamic parts of research-in-the-making in public. The purpose of this varies from project to project, and it can be an uneasy positionality to hold for long. Yet, these conditions provoke new relations with research actors, which in turn reconfigure power dimensions—who and what is the research/er/ed? For all the discomfort, the following authors argue that inviting publics, ideas, and problems *into* the research during the process adds much to the work.

Exchanging as a mode of transmission is the focus of Max Liboiron’s chapter about her social and economic research experiments in Nelson, Canada. Members of the public were invited to view *Salt-Winning: Equal to or Greater Than* (2010), an interactive exhibition of art objects made from waste. They could take any object provided they leave something behind of equal or greater value. The project redefines conventional definitions of transmission, which Liboiron argues “implies a unidirectional exchange from one source to another,” and instead brings to life “two-way exchange as a mechanism for research.” Liboiron then closely examines “the *ethics* of reciprocity” and uses exchange as a method in her chapter to invite readers into an experiment in valuation. Here,

the process of exchange becomes a mechanism to further unsettle divisions between the researcher and participant and in turn deepens understandings of value and valuation.

Playing is the subject of Larissa Hjorth and Ingrid Richardson's chapter. They discuss intersections of ethnography, art, and play in an Australian project, *Games of Being Mobile*. After spending years investigating mobile games as part of the broader social and media ecology within household relations, they took the project out into different public spaces. They invited young people and families to design new games and to think about the relationship between digital and nondigital genealogies. In doing so, participants become artists via their playful interventions and games installed in museums and outside in urban public spaces. The authors reflect on what these transmissions rendered visible for everyone involved and discuss why it was important for the research to "disseminate the findings in a way that was collaborative."

Kristina Lindström and Åsa Ståhl explore ideas around *Living* with mundane technologies in their HYBRID MATTERS project about plastiglomerates (a new term for how plastics have become part of a geological entity) and plastic-eating mealworms. This collaborative project involved a series of walks on remote Icelandic beaches, sending participants home with their own worms; beach bonfires; and dinner parties in Reykjavik and Westfjords in Iceland. Many of these events emerged in the process of doing the research with and about human and nonhuman participants. The authors critically reflect on how these events and practices gave shape to multiple un/expected happenings in public.

HOLDING AMBIGUITY

While present throughout the book, the challenges and opportunities that arise from resisting the tidying up of research are brought to life in this section's chapters. Uncertainty and ambiguity are central. Here, tactics of transmission operate as recruitment tools, presentation platforms, devices for knowledge exchange, data generation, and analytic opportunities, which researchers then layer back into projects. They carve out spaces where different disciplines, people, and practices intersect and overlap. This can feel risky and vulnerable. Yet, these authors deliberately hold on to these feelings. They reflect on unexpected happenings and explore insights that emerge. Importantly, these are not only

issues for researchers to deal with but in many cases are similarly demanding of participants and other stakeholders.

Nerea Calvillo's opens her chapter about *slowing* by questioning the idea of failure in her air quality study in Medialab-Prado, Madrid. She discusses the role of a collaboratively designed visualization platform that measures pollution. Circulation and use of the device did not proceed as expected and she asks if dimensions of success and failure are matters of perspective and speed. "Can we address a systemic urgency in slow modes? Can visualizations that have not been used by activists or policy makers, produced in such a context, still have transformative capacities? If so, do they act at a different speed?" Readers will note that Calvillo deliberately slows down the reading of her argument through spacing of the paragraphs. She also draws attention to the emotional and physical labor involved in managing transmissions with different velocities, noting "feelings that are hardly spoken about in collaborative practices."

Focusing on exhibitions, Janis Jefferies investigates transmission from the perspective of the viewer, experiencing artworks in context. This involves many different forms of *performing* and *provoking*—from looking and listening, stripping naked, sitting and standing, to talking and playing. She takes readers on a journey through different museums and shows, from the Barbican and Tate Modern in London to SaVAge K'lub in Brisbane, Australia, via series of scenes. Experiences are shaped by materials, sites, performers, and other participants. These combinations create points of attachment for viewers, who bring their own cultural and political ideas and bodies into the work. Jefferies writes about how these kinds of projects "[offer] critical reception as much as a critique of colonialism" and asks what we can learn from these provocations.

Sarah Kember writes about the political potential of different kinds of *writing*, out of turn, through her own science-fiction. This kind of writing doesn't fit easily with academic or literary establishments. It is hard to categorize, and she queries conventional binaries and boundaries. Engaging in this kind of practice is not for the purpose of just doing something differently but is about moving "against false divisions like the creative and the critical, imagination and reason, theory and practice." Writing like this, out of turn, produces a space of ambiguity where different things can happen. But it is risky because it "lacks guarantees and end points." Kember asks questions that resonate throughout

the whole collection—“what is at stake in making new cuts, or rather, in cutting against the standardization and instrumentalism of media and genre in and through which we are coconstituted?”

EVOKING (OR AMPLIFYING) THE SENSORY

While the study of sensory topics has been on the rise, social scientists largely still “do not make use of these senses, and different devices to research and represent their objects of research” (Guggenheim 2015, 346). The following authors take up this challenge. They discuss transmission tactics that deliberately evoke or amplify the senses, and in the process, bring into being alternate ways of thinking about, interacting with, and understanding their subject areas. Critically, they seek not to represent a single social reality but rather to make and reflect new things. Much like how John Law and John Urry talk about research methods, these kinds of transmissions “are performative” and “have effects; they make differences; they enact realities; and they can help to bring into being what they also discover” (2011, 393).

Alexandra Lippman’s chapter focuses on *listening*. She takes an ethnographic approach to her study of weekly *bailes* (dances) in the favelas of Rio de Janeiro. Her thick description of *funk carioca* (Rio funk) is rich in visceral detail, and yet her participants made her question how it is possible to convey the feeling of music. “They rub the skin on their forearms to gesture that a song is good. Rather than a personal experience, listening is a public experience.” In response to what she felt was a limitation of text, she began to experiment with her research practices: “What forms of knowledge transmission would not subsume sensory ways of knowing? How could I transmit the importance of feeling in *funk*?” Realizing she was not alone with these questions, she founded the Sound Ethnography Project and discusses what the combination of sound recordings and writing offers sensory research practices.

Materiality is central to Bonnie Mak and Julia Pollack’s chapter on card cataloging. They investigate the history of (meta)data archiving, which brings to light how different taxonomic systems shape ways of thinking and knowing—a topic that is often dematerialized in information system discussions. They focus on the card catalog system, theoretically and materially. Further to a discursive critique of linear systems of power, they “offer a compelling materiality

by which description or metadata may be studied” via a series of printed cards that invites the reader to perform, interpret, and scrutinize this mode of transmission. Their unique approach directly questions the politics of methods, how different taxonomic systems convey as much as they conceal, and what each bring to an understanding of metadata.

The final chapter in the book by Rebecca Coleman provides another reading and theming of these contributions. By responding rather than concluding, she keeps the book open and points to further ways of thinking with and through transmissions. This involves asking questions such as, “What are some of the premises and ideas that cut across the contributions to the book?” and “How might they be taken up, expanded, pushed, and pulled?” Coleman structures her chapter around the themes of responding, transmitting, making and materials, mess and trouble, and outputs, (research) process, and worlding.

Despite being vastly different in approach, materials, and sites, the authors in this book have much in common. They share a commitment to combining the *what* with the *how*. All firmly situate their transmissions *in* their research and vice versa; how they transmit their findings is just as integral to the research as choice of subject, theory, and methods. And few appear averse to risky, messy, occasionally awkward or embarrassing practice. In many cases, their work operates on the fringes of their subject areas and reimagines what might be possible within their disciplines. Essentially, what binds them is their openness to experiment with a broad(er) range of critical tactics for making and communicating research differently. As Becker has argued, all devices, methods, and modes of representation are “*perfect—for something*” (2007, 17).

NOTES

1. Recorded with permission at *Transmissions & Entanglements: Experimental Publishing*, an international symposium at Digital Cultures Research Lab (DCRL), Leuphana University, Lüneburg Germany, 2015.
2. See the acknowledgements for more about the ESRC funded Transmissions & Entanglement events and networks on which this book is based.

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