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How News Become "News" in Increasingly Complex Ecosystems: Summarizing Almost Two Decades of Newsmaking Reconstructions

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ABSTRACT
This paper summarizes almost two decades of applying the newsmaking reconstruction method for studying numerous aspects of news processes. The suggested methodology can overcome the shortcomings of traditional methods in changing and decreasingly observable news environments. While suiting a wide array of theories, newsmaking reconstructions are especially built to address the strategies and priorities of practice theory, and its inclusive desire to avoid a priori definitions of practice that curtail the studied terrain. In newsmaking reconstructions, journalists (or other key-newsmakers) are asked to recreate – step by step – how they produced a specific sample of recently published items, systematically covering sources, technologies, practices, evaluations, relationships, and so forth. To avoid a methodological recipe-book tone, the paper suggests not only practical guidelines and tips for scholars who consider using reconstructions, but also a review of more than two dozen studies that used this method in different news contexts and the insights of three researchers who implemented reconstructions in their recent studies. For the first time, the paper compares quantitative and qualitative reconstructions, reflecting on the importance of studying practices and processes in journalism and other disciplines.

KEYWORDS
Journalism studies; methodology; practice theory; routines; news practices; news sources

Introduction

The overwhelming transformation of news environments in recent years presents not only theoretical challenges but also methodological ones (McMillan 2000; Ahva 2017; Witschge and Harbers 2018). In these growingly complex environments, traditional methods are losing at least some of their effectiveness for studying news processes.

In this paper we map these emerging methodological constraints and suggest how newsmaking reconstructions can help address them. Scholars who consider using newsmaking reconstructions may use this paper as a quick gateway to the methodology. It suggests step-by-step guidance accompanied by research strategies, tips and insights how newsmaking reconstructions can be implemented quantitatively, qualitative or as a mix thereof in order to capture the richness and complexities of current news

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environments. These are based not only on our own experience, which extends over almost two decades, in case of the first author, and four years for the second, but also on a review of more than two dozen studies that used reconstructions in different news contexts as well as short interviews with three researchers who implemented reconstructions recently.

In brief, newsmaking reconstructions are a methodology that records in retrospective the ways in which news become "news," based on reporters' (or other key newsmakers') testimony regarding a specific sample of their recently published items. Due to their panoramic overview on news processes, reporters can illuminate aspects that can neither be detected in their published output nor even observed in their actual conduct, such as the contribution of different sources, technologies, and news practices to their items, let alone more abstract and hidden practices such as the judgements and evaluations made on the way to publications.

To avoid an overly prescriptive tone that is typical of methodological texts, we open with a theoretical discussion on the importance of studying processes and practices in journalism and in other fields and reflect on premises behind reconstructions in order to set the stage for the practicalities of newsmaking reconstructions. The paper concludes with theoretical reflections arising from the uses of reconstructions.

Why Processes and Practices Matter

Like processes in other fields, news processes matter. As many of the phenomena that attract research interest, they don't emerge instantly, like Athena's leap from Zeus's head. Similar to other outcomes of social, political, cultural and even industrial processes, they cannot be understood and evaluated in isolation from the processes that brought them into being, as it is for books, films, games, music albums or other cultural products, whereby "the production of culture is inseparable from the culture of production" (Davis 2008, 59).

Even outcomes of political processes such as policies, laws and public decisions share important features with news. All of them are more accessible for research than the processes behind them, and all of them convey significant rhetorical, cultural and symbolic powers, that make them authoritative, ostensibly self-sufficient and "speaking for themselves." However, neither of these outcomes would have existed, or even looked remotely as they do without the particular processes that brought them into being.

The theoretical significance of studying processes and practices is highlighted by practice theory, which is increasingly being adopted in sociology, anthropology, philosophy and journalism studies, since the "practical turn" during the 1980s (Stern 2003; Cetina, Schatzki, and Von Savigny 2005). According to practice theory, practices are socially recognized forms of action that are not only shaped by cultural and social forces, but also shape these forces through their iterative enactment. "It is through action and interaction within practices that […] social life is organized, reproduced and transformed" (Cetina, Schatzki, and Von Savigny 2005, 3). This "honor" (Schatzki 2005, 10) gives practices more independence from social structures and systems (Giddens 1984; Lynch 1993), and more agency to the practitioners who execute them (Pickering 2001). Practices represent complex interrelations between micro-level activities and macro-level forces, norms and practical constraints, "sayings and doings"; individuals and collectives; people and material objects (Ahva 2017; Ryfe 2018; Witschge and Harbers 2018).

Inspired by practice theory or not, several disciplines developed their own methods to explore processes and practices they are interested in. Probably the most known here is forensic sciences, which use *case reconstructions* or *crime scene reconstruction*s to integrate physical evidence and fit them into the broader jigsaw puzzle of an investigated crime (Fisher and Fisher 2012). In Psychology, Kahneman et al. (2004) developed *The Day Reconstruction Method* to assess how people spend their time and how they experience the various activities and settings of their lives, combining time-budget measurement and experience sampling (Kahneman et al. 2004). Process mining techniques are a relatively new method in business administration and data mining, which tries to discover, monitor and improve processes by extracting knowledge from event logs that are increasingly available in today's information environments (Van der Haak, Parks, and Castells 2012). In the legal field, scholars are using legislative history to trace the genealogy of legislation based on the documentary trajectory of the course of creating legislation, relying on committee reports, discussion minutes, committee hearings, floor debates, and histories of actions taken (Fleischer 2012). Software engineering is using knowledge acquisition and knowledge elicitation methods to model expert performance and convert them into expert systems (Gennari et al. 2003; Shalom et al. 2008).

Closer to news, the field of cultural production explores the genealogy of books, films etc. using three perspectives. Either by focusing on the industry-level political economy, or by analyzing the "texts" of cultural products, or by focusing on the processes of their production using sociological and ethnographic methods (Davis 2008). Health studies developed practice-based research, "which is grounded in, informed by, and intended to improve practice" (Westfall, Mold, and Fagnan 2007). Legal and political scientists interested in the processes behind particular policies, regulations and legislation, can use, for example, the *Advocacy Coalition Framework* (Sabatier and Weible 2007), focusing on the alliances and the coordination between social actors that promoted legislation based on similar core beliefs.

And yet, in journalism studies, "content [analysis] is king" as one the most prevalent research methods (Kamhawi and Weaver 2003; Steiner 2009; Karlsson and Sjøvaag 2016; Reich and Barnoy 2016a), due to the highly consequential role of messages in the communicative chain (Krippendorff 2012). However, more than other cultural products that remain speechless regarding their production and origins (Davis 2008), news products systematically disguise important "meta-data." These may include, for example, the involvement of leaks, anonymous sources, PR, off-camera sources and plagiarism (Sigal 1986; Hallin, Manoff, and Weddle 1993; Karlsson 2010). Without such meta-data one cannot evaluate adequately the epistemic authority of news and the epistemic agents behind them.

Newsmaking reconstructions have special bonds with practice theory, even though they have been used in different theoretical frameworks – sociological theories (e.g., McManus 1994; Anderson 2013), philosophical (e.g., Barnoy and Reich 2019; Reich and Barnoy 2019) and political ones (e.g., Reich 2006; Hoxha and Hanitzsch 2018). This relationship is mutual. While practice theory highlights the importance of practices and their broader social and cultural context, newsmaking reconstructions provide a methodological blue print for carrying out the research agenda of practice theory. More specifically, newsmaking reconstructions can help fulfill the inclusive desires of practice theory and its bottom-up strategy, exploring traditional and non-traditional news, without the a priori restrictions of other theories that might exclude some types of news or news makers.

Before we delve into detailed discussions of how reconstructions can carry out the visions of practice theory, we need to clarify some of its underlying premises about newsmaking and their methodological implications.

Underlying Premises

Before embarking on the study, it might be beneficial to clarify whether one is aware of and subscribes to a series of theoretical, methodological and epistemic premises that underpin not only the employment of reconstruction interviews, but also the nature of news processes and the appropriate ways to study them. Reflecting on our own assumptions in former studies, we detected three leading premises. Considering and adjusting them may help scholars make more suitable methodological choices that better serve their research purposes, enabling more realistic expectations toward their research design and anticipated results.

News Processes are Decreasingly Observable

Both classic ethnographies (e.g., Tuchman 1978; Gans 1979; Ericson, Baranek, and Chan 1989) and more recent ones (e.g., Anderson 2013; Usher 2014; Coddington 2018) have provided precious insights regarding how news is produced. However, newsmaking processes are becoming less observable (Robinson and Metzler 2016) following the melting down of the newsroom (Anderson, Bell, and Shirky 2015; Wahl-Jorgensen 2017), the limited number of stories that are reported from news scenes (Reich and Godler 2017) the dematerialization of information and its fragmentation over growing numbers of platforms, operated inside and outside newsrooms (Berry, Kim, and Spigel 2010; Anderson, Bell, and Shirky 2015). Observability is even more restricted when stories involve sensitive issues, anonymous sources (Manning 2001) and precarious producers such as bloggers, self-employed and citizen journalists who are hardly organized around traditional newsrooms (Ahva 2017; Örnebring 2018; Ryfe 2018; Witschge and Harbers 2018). Other trends that reduce observability are the increasingly iterative nature of news processes (Jarvis 2009), involving series of updates, corrections and follow-ups and the growing work pressures that limit reporters' time, patience, attention, reflective space and willingness to allow outsiders inspect their day-to-day performance (Lund 2012; Van der Haak, Parks, and Castells 2012).

News Reporters Enjoy the Most Panoptic Perspective on News Processes

Reporters are the only actors across the news chain who can still see the entire chain, at least as far as their own items are concerned, thanks to their positioning between different sources, news scenes and technologies of incoming information on the one hand, and their editors, newsrooms, counterparts and competitors on the other. The growing fragmentation of news flow across time, space and technological platforms only underscores their strategic positioning. And yet, reporters have their potential blind spots and biases, as discussed below. Against this backdrop, scholars may consider using the methodology presented here.

News Processes are Both Simple and Complex

News is an “assemblage” (MacKenzie 2009; Anderson 2015) of materials, authored by reporters, with substantial contributions of human and non-human news sources which negotiate and exchange assertions, corroborations and denials. Only in a minority of cases does news rely on non-mediated eye witnessing (Reich and Godler 2017). The share of sources’ contributions may shift between snippets of information to entire news stories. Schematically speaking, the reporting process starts with the journalist hearing for the first time about a potential item, and concludes with published information (sometimes including iterative corrections, updates, audience responses and follow ups). In practice, however, there are fewer leading sources, technologies and practices, and fewer combinations thereof. The forces that give precedence to particular modes of exchange over others are constraints such as shortage of time and resources, the routinization of the unexpected (Tuchman 1978; Tandoc and Duffy 2019), hierarchies of credibility and newsworthiness, source’s fecundity, availability, officialdom and capacity to “subsidize” reporting energy (Gans 1979). Hence, despite the capacity to rely on endless numbers of sources, most items are based on two to three sources (Reich 2009) and their exchanges are mostly oral and increasingly textual (Reich 2018), despite the availability of other channels. News environments are becoming richer and more complex, among others due to the constant emergence of new actors and “actants” such as social media, big-data warehouses and the contributions of ordinary citizens (Latour 2005; Hermans, Schaap, and Bardoel 2014; Rogers 2014; Sienkiewicz 2014; Tandoc 2014), while traditional channels such as documents, telephone interviews, and even first-hand witnessing at news scenes are not rendered obsolete (Reich 2018). Another factor that increases complexity is the growing “liquidity” of social environments (Deuze 2008; Bauman 2013), challenging traditional dichotomies between consumers and producers, sources and journalists, etc. (Ahva 2017; Ryfe 2018; Witschge and Harbers 2018).

The Use of Newsmaking Reconstructions

In our exploration of former uses of reconstructions in journalism research, we detected more than two dozen studies. Some of their antecedents date back to the 1970s (e.g., Aronoff 1976; Sachsman 1976) yet most of them were conducted in the past two decades, under different research designs and names. The “story behind the story,” or stories’ “biographies” (Brüggemann 2013) “retrospective reconstructions” or a study of “practices on the ground” (Hoxha and Hanitzsch 2018). Some scholars even *invented* their own mode of reconstructions, only to later discover that they weren’t the first. This may attest to the fact that they share not only the “invention” of reconstructions, but also some of the underlying premises regarding the changing nature of news environments, and the ways to address them.

Reconstruction studies can be divided into five main strands, the most prominent of which are sourcing practices. Others strands cover the broader field of news practices, the impact of technology on newswork, comparisons between different types of news producers and changes across time. Here is a brief review of the five strands.

- *Sourcing studies*. The leading theme in this strand is the impact of PR on news (Aronoff 1976; Sachsman 1976; Covasniano 1998; Reich 2009; Van Pelt 2014). Other aspects include reliance on expert sources (Albæk 2011; Finn 2016; Sharon and Baram-Tsabari 2018), trust in sources (Manninen 2017; Barnoy and Reich 2018) source strategies (Schlesinger 1990), the logic of source selection (Barnoy 2013), reliance on leaks (Reich and Barnoy 2016b) and the role of sources in regional press (Brolin and Johanson 2009).
- *News practices*. This includes notably the practice of verification (Shapiro et al. 2013; Godler and Reich 2017; Barnoy and Reich 2019); factors that shape news framing (Boesman, d'Haenens, and Van Gorp 2015), the selection of news photographs (De Smaele, Geenen, and De Cock 2018), the impact of gender and race on newsmaking (Vandenberghe, d'Haenens, and Van Gorp 2015) and the practices of foreign journalists working in China (Yaun 2015).
- *Comparative studies*. This includes comparisons of news practices in different beats, organization types, media types and even countries (Reich 2009; Brüggemann 2013; Boesman, d'Haenens, and Van Gorp 2015; Hoxha and Hanitzsch 2018), the "media-logic" behind different news platforms (McManus 1994; Van Hoof 2015) and journalists' working conditions in different areas of conflict (Lohner, Neverla, and Banjac 2017).
- *The impact of technology*. This includes a comparison between the practices of workers in aggregators and regular newsrooms (Anderson 2013), the role of Twitter as a news source (Johnson, Paulussen, and Van Aelst 2018), the diffusion of mobile live-streaming apps (Stern 2016) and the changes in technology use for news making (Reich 2005, 2018).
- *Changes over time*. The changing practices of newsroom librarians following search automation (Boyles and Meisinger 2018); the impact of changes in the news environment on the individual journalist (Lee-Wright, Phillips, and Witschge 2011) and longitudinal trends of stability and change in different newsrooms (Reich 2014).

Executing a Reconstruction Study

Scholars who consider using newsmaking reconstructions will find in the following sections detailed guidelines and aspects they should consider in order to adjust the method for their specific purposes. The recommendations, summarized in Figure 1, are organized around four stages, each of which opens with general observations, followed by specific remarks on qualitative or quantitative research. This section is also informed by insights and tips from three researchers who have agreed to share their recent experience in implementing reconstructions in their studies: Milda Malling from Södertörns Högskola in Sweden, Jan Boesman from KU Leuven University in Belgium and Abit Hoxha from the University of Agder, Norway.

Stage 1 – Study Design

First, researchers needs to make sure that the study is suitable for reconstructions. For that, it needs to address four criteria: (1) involve a process that (2) ends up with particular units

Guidelines and considerations according to research stage

Quantitative reconstructions, unique considerations		Qualitative reconstructions, unique considerations
	Research design	
• Define hypotheses. • Prepare close-end questions with open ended options for the category "other". • Train additional interviewees (if needed).	• Define the scope: no. of interviewees, items and questions according to research purposes and resources. • Cover multi-level variables.	• Prepare open-ended questions and "pocket" follow-up questions. • If needed: select interviewers with deep background and give them extensive training
	Sampling interviewees	
• Obtain and compile an updated list of the entire population. • Choose a representative sample of interviewees.	• Identify the relevant population/s. • Sample.	• Sample interviewees purposively focusing on qualified and diverse interviewees.
	Sampling items	
• Sample recent publications randomly. • Sample extra items to replace unsuitable ones. • Start with a "simple" item and order the rest to maximize interviewee's attention and cooperation.	• Focus on recent publications. • Avail the sampled items to the reporter in a convenient mode.	• Sample items purposively in accordance with research purposes. • Select comparable items that cover the studied phenomena and the luck thereof. • Allow interviewers participate in item selection.
	Data analysis	
• Acquaint yourself with the data using descriptive statistics. • Keep original scales whenever possible. • Include all possible variables when testing regression models.	• Organize the database and clean data. • Adjust the analysis scheme to the actual findings.	• Choose your strategy of analysis: Post-positivist, constructivist or interpretive. • Use purposive analysis – based on re-defined purposes.

Figure 1. Newsmaking reconstructions: research flow chart.

of outcome, where (3) the process behind it can be recreated based on the testimony of a key approachable contributor or observer/s, who (4) has a panoramic overview of the entire process.

Second, one must outline potential research questions and hypotheses and the scope of the study (number of items, reporters, etc.) needed to address them. The scope depends not only on methodological and theoretical considerations, but also on the available resources.

One of the primary decisions in the use of reconstructions is the quantitative versus qualitative dilemma. The mix of both is a third option. The final choice depends largely on the research purpose and the researcher's personal inclinations and skills. Beyond the regular pros and cons, the main characteristics of qualitative vs quantitative reconstructions are presented in Table 1.

Quantitative reconstructions can elicit a pixeled image of news process, whereby each pixel represents a specific source, technology, practice or judgment, based on detailed reporters' accounts. This pixeled image enables the detection of patterns and trends that cannot be observed directly or in greater resolution.

While qualitative reconstructions seek to maximize reporters' reflections and elicit their reasoning behind particular practices, quantitative reconstructions try to encourage undistorted accounts of the specific pixels, while minimizing reflections, biases and hindsight. Quantitative reconstructions include questions such as "how much time did you spend working on this specific item?" or "did you verify the information coming from this source?" On the other hand, qualitative reconstructions will use more reflective questions such as "why did you spend more time on this specific item?" or "what made you decide not to verify the information from this source?"

Table 1. Qualitative vs quantitative reconstructions.

	Quantitative	Qualitative
Overarching purpose	Maximize uninterrupted recollection of news process behind specific sample of items, while minimizing potential biases, hindsight and post hoc reasoning	Maximize reflection and reasoning, around a specific sample of items
Types of data for study	• Four levels of data collection: source level, item level, reporter level and organizational level. • Frequencies and prevalence of different actors, activities and technologies. • Rankings and evaluations (e.g., levels of credibility, newsworthiness, reporting effort).	• Logic and reasoning, decision making, thought processes (why did reporters decide to act the way they did in a specific case? what were they thinking about?) • Perceptions, norms and causes behind specific activities, evaluations and tendencies. • Reporters' knowledge before, during and after the production of an item.
Research questions (examples)	1. What are the type of human and non-human sources reporters rely on? 2. Which technological devices they use to communicate with sources, and which to bypass sources 3. Under what circumstances do reporters verify information? 4. How often do reporters have to address a factual conflict? 5. Are certain sources considered more credible than others? 6. How difficult was it to gather information? 7. Under what circumstances do reporters publish single source items? 8. When do reporters rely more heavily on PR?	1. Why do reporters contact specific types of sources? 2. How do both parties choose channels to communicate and exchange information? 3. Do verifications effect reporters' knowledge? in what ways? 4. Do reporters' use different practices to address factual conflicts? 5. How do reporters evaluate credibility? 6. How planned vs unplanned events resonate in their work process? 7. How do reporters justify reliance on a single source? 8. How do reporters envision the strengths and weaknesses of PR sources?
Interview flow	Formal, rhythmic – led by the interviewer	Informal, agile – led by the interviewee
Data analysis	• Frequencies and associations between variables. • Multi-level analysis (contact/ item/reporter and organizational level). • Testing of hypotheses and validating models.	• Thematic analysis to identify effects of expected and unexpected factors. • Explorative analysis. • Critical analysis.

Both modes of reconstruction avoid free floating questions that do not relate to specific items such as "how often do you rely on public relations." Reporters have neither the chance to systematically observe their reliance on PR, nor the motivation to be frank about the prevalence of this practice in their work. On the other hand, when asked about sources' gender, sector in society and role (e.g., senior official, ordinary citizen, or a PR practitioner), reporters have less leeway and motivation to embellish their accounts.

One of the greatest benefits of quantitative reconstructions is the ability to collect data that relate to four levels of analysis, and explore their inter connections:

1. Source-level. The unit of analysis of these data is the individual source or contact, including aspects such as source's gender, sector in society, level of credibility etc.
2. Item-level. This characterizes the entire news item, e.g., type of event, level of importance and interest, as evaluated by the reporter.
3. Reporter-level. This relates to the background and demographics of the reporter authoring a sample of items (e.g., reporter's age, years in journalism, type of employment and education).
4. Organizational-level. This relates to the type of organization that employs the reporter or a group of reporters (e.g., quality vs. popular, digital vs. print, private vs. public service).

To minimize weariness, one should avoid questionnaires that are too ambitious and/or too long and keep questions clear, formal and rhythmic. Trained and experienced interviewers with a background in journalism, can lead a time-efficient interview, maintaining reporters' orientation regarding the progress of the reconstruction process, quickly finding the relevant rubrics, while remaining highly attentive to the nuances of the reconstructed item and sensitive to replies that don't fall smoothly into one category or another. A pre-tested and exhaustive list of reply categories can also sustain time-efficient reconstructions.

Qualitative reconstructions not only provide a glimpse "inside journalists' mind" (Zhong and Newhagen 2009, 589) but also the contextual richness of particular stories presented to them, anchored in particular real-life circumstances, constraints, decisions, actions and thoughts.

Thematic analyses of reporters' reflections and insights that emerge in qualitative reconstructions can reveal unexpected connections between different factors and the newsmaking process, such as the associations between verifications and risk of publication (Barnoy and Reich 2019), or patterns of technology use (Reich 2018).

Finally, combining quantitative and qualitative interviews can be done in different ways (e.g., Barnoy and Reich 2019; Reich and Barnoy 2019). Qualitative reconstructions should come first in an explorative study, when issues are complex, variables are not yet defined, and where one wishes to detect hypotheses for the subsequent quantitative interviews. Alternatively, they should follow the qualitative interviews in a more explanatory research, to deepen scholars' understanding of quantitative findings.

The design of the questionnaires also affects the scope of the study. For example, an overly ambitious long questionnaire might tax reporters' patience. No interview should take more than 60–75 minutes. In our most recent study, this allowed us to reconstruct seven items quantitatively and two items qualitatively.

Questions in the quantitative questionnaire should include maximal options for reply, based on recent pilot studies. It is easier to collapse them at later stages. The "other" option should always be available, for complex cases that do not conform to these categories. Ambiguous questions that might be interpreted differently by different interviewees should be detected and disambiguated.

Despite the obvious extra work compared to telephone and web surveys, we highly recommend meeting reporters face-to-face. Physical co-presence enables greater commitment and accuracy and higher levels of interviewers' attention and sensitivity to the nuances of reporters' non-verbal behavior, and more sensible treatment of ambiguous replies that don't fall into clear rubrics. Furthermore, face-to-face interviews enable easy presentation of the sample stories shown to the reporters and a smoother shift from one story to another.

Reconstructions are easily scalable, based on assistant interviewers, however, these must be carefully selected, instructed, trained and supervised. Qualitative reconstructions require a more senior researcher with deep background and intimate acquaintance with the research design and its underlying themes.

Stage 2 – Sampling

Sampling should take into account not only the published items, but also the reporters behind them. Ostensibly, one may start by sampling items and then try to locate and study the reporters who authored them. However, this strategy might be both inefficient logistically and non-representative enough, eventually forcing researchers to cover excessive populations of reporters, some represented with numerous items, others with few publications if any. Hence, our suggested strategy is to focus on sampling equivalent clusters of items published by a sample of reporters, covering a mix of beats that suits the research purposes.

Though most reconstructions focused on traditional mainstream journalists (e.g., Reich 2009; Brüggemann 2013; Boesman, d'Haenens, and Van Gorp 2015; Hoxha and Hanitzsch 2018; Reich and Barnoy 2019) they can be easily extended to citizen journalists and citizen sources (Reich 2008), news aggregators (Anderson 2013) and other emerging types of approachable contributors to news making.

Quantitative sampling should evenly represent different populations of items and reporters, to allow generalizability. This may require access to comprehensive databases of items and updated lists of relevant newsmakers. Qualitative studies may allow more permissive sampling; however they should strive to maximize diversity, covering different ages, genders, educational backgrounds, media types and beats.

In our experience, sampling items published during the month preceding the interview makes an ideal balance: not too short in order to allow a variety of items, yet not too long to challenge reporters' memory regarding the biography of the items.

The specific items must be randomly sampled for a quantitative study, or purposively for a qualitative one. In any case, the sample should cohere with the research purposes. If, for example, the study wishes to explore exclusive news stories, then one should sample both exclusive and non-exclusive stories to enable comparison.

Stage 3 – Conducting the Interviews

The ergonomics of the interview is not just a technical issue. Interviewees must have the reconstructed items in front of them. Reporters often skim the headline and urge interviewers to start, however, our experience shows that encouraging the interviewee to spend a couple of minutes reading the item dramatically improves their recollections as well as the richness and accuracy of their accounts.

In previous studies, we displayed the sampled items as printouts and transcripts of print, radio, and online news, and clickable video clips – placed on a desktop, laptop or mobile phone – for television reporters. In the most recent study, we gave interviewees tablets with the items preloaded on them.

In the past we recommended using special seating arrangements, so that the interviewer cannot see the specific item the interviewee is holding in order to maintain source confidentiality. However, our recent experience shows this arrangement is not beneficial. In practice, once the interviewees have agreed to participate, they trust the researchers enough to obviate item anonymity. Moreover, knowing which items is being reconstructed in real time opens new methodological avenues to connect the process and the product (based on content analysis). It also improves the credibility of the entire interview, since knowing that the interviewer is following your reconstruction, asking clarifying questions about odd replies, increases reporters' accountability and accuracy.

Appropriate timing and venue for interviews are also not trivial issues. On the one hand, one wishes to avoid crowded public places and newsrooms (where superiors might interfere or even ask reporters to avoid the interview). On the other hand, one must adjust to interviewees' schedules and convenience, to avoid delayed interviews, especially considering the growing pressures on reporters, and the demanding format of this method.

We recommend ordering the sample, avoiding sequences of too complex or too unimportant stories that might frustrate interviewees, or slow down the rhythm of the interview. In qualitative studies, interviewees should be given more active part is shaping the interview, even in choosing items, as long as they fit the research criteria.

In general, all of these tips regarding the execution of the interviews are meant to improve their flow and to balance between two needs: to remain formal enough and "in control" of the interview on the one hand, while smoothing the process for both the interviewer and the interviewee on the other.

Stage 4 – Analysis

To give the reader an idea how news processes are seen through the data of reconstruction studies, we tried to recreate in a slow motion the process of being exposed to one's own data for the first time. After months of decomposing hundreds of items, during which you could see only the tree level – sometimes even the single leaf level – you are about to see the entire forest. You start skimming the quantitative data trying to conduct an initial test of your hypotheses, research questions (and unavoidable prejudices). Who are the main sources today? What is the share of PR? Has new technology indeed reshaped newswork?

At a first glance, everything looks "messy" and chaotic. How come there is no significant correlation between source credibility and cross verifications (Barnoy and Reich 2019)? How can I make sense of so many channels of communication between reporters and sources (Reich 2018)? Qualitative reconstructions also expose a dizzying amount of highly rich interview material; numerous dots that can be connected in exponential numbers of ways. Can reporters' knowledge be explained by their own knowledge or their sources' knowledge? By the information they gathered vs. their preexisting background knowledge? By their evidence or inference?

But then, like a photo in a darkroom, the "bigger picture" gradually emerges; complex and erratic, yet dotted with correlations, patterns, clusters, tendencies and logics that go in tandem with social theories of newswork, and especially with practice theory (Ahva 2017; Ryfe 2018; Witschge and Harbers 2018). Verifications do not correlate with source credibility, but they do with official sources and story characteristics (Barnoy and Reich 2019). The logic of using communication technology emerges when collapsed to oral and textual versus face-to-face channels (Reich 2018).

The first stage for both qualitative and quantitative findings is data cleaning and preparation of the analysis scheme, adjusting the original purposes of the research to the actual findings. Qualitative analysis should detect repeating, consensual themes as well as exceptions, which, despite being mentioned by a few or even a single interviewee, might be important in and of themselves. Quantitative analysis should start with initial acquaintance with your own data. This means exploring the proportion of different actors and actants, the frequencies of different practices (e.g., verifications, leaks) and averages (e.g., number of sources per item or average reporting time). After such acquaintance you are more ready to go on with your analysis scheme, answer research questions and test hypotheses based on previous studies or even common sense.

Discussion

The more fragmented and virtualized the journalistic environment becomes, involving a growing array of human and technological agents, the more we need methods that can trace these diversifying contributors to published news. The capacity of reconstructions to carry out the methodological desires of practice theory, and their broader methodological rigor, derive from a combination of the following features:

1. *The retrospective viewpoint*. Looking backwards, enables the capture of entire processes, including the contribution of any actor and factor to this genealogy.
2. *The panoptic position*. Reporters or other key news makers can use their vantage point to observe virtually every link in the chain.
3. *Item anchored testimony*. Focusing on a specific sample of recent publications, each of which is embedded in particular real-life circumstances increases the reliability and richness of the reporter's testimony, unlike free floating interviews, in which reporters are asked to summarize phenomena they have little chance to explore – let alone measure.
4. *Quantifiability*: Due to their quantitative capacities, reconstructions have a unique explanatory value in testing hypotheses and analyzing associations between different facets of newswork.

5. *Granularity*: The capacity to delve into the nano-level of the single contact with a single source offers endless options for answering research questions and testing hypotheses regarding associations between news phenomena.
6. *Comparability*: Reconstructions can test the expected similarities and differences across media type, format, news outlet, beat, race, and gender (cf., Kian and Hardin 2009; Machill and Beiler 2009; Hanitzsch and Mellado 2011; Reich 2014), testing for example medium theories or theories of convergence, isomorphism and new institutionalism.
7. *Contextual understanding*: Unlike studies that focus on a single type of source or technology, reconstruction interviews enable to explore the entire range of sources and technologies. This perspective minimizes both over-estimations and under estimation, indicating the relative contribution of each entity.
8. *Responsiveness and adjustability*. Reconstructions are highly responsive and adjustable to the realities of the studied environment. For example, the prearranged lists of variables in the quantitative questionnaires are based on careful pilot studies. In addition, we recommend a generous use of the "other" category and instruct interviewers to prioritize understanding of the specific realities behind the studied item rather than quick completion of questionnaire rubrics.

On the micro-level of the individual journalist, reporters emerge from our reconstructions as a hybrid of *homo sociologicus* and *homo economicus* (in the words of Reckwitz 2002, 248; cited by Boczkowski, Mitchelstein, and Matassi 2018). Their social persona can be seen through common tendencies to negotiate source materials orally, or through their preferences to rely on regular contacts over private citizens, representing more or less accepted norms, ideals and standards of conduct. On the other hand, their economic persona can be seen in the ways they budget their scarce time, attention span and reporting energy, relying on changing number of sources under particular circumstances.

On the more meso-level, news practices emerge from both qualitative and quantitative reconstructions as neither perfectly objective, as post-positivists might argue (Mackenzie and Knipe 2006), nor purely subjective, as some social constructivists would suggest (ibid). While showing a genuine will to depict realities as they are, in some of their verification practices, source selections and allocation of trust, they adhere to routines and practices that advantage particular sources, versions, and hierarchies of credibility.

Like other methods, reconstructions have their own shortcomings. They are blind to items that weren't published eventually due to different reasons and to routines that are not item-specific. This should be taken into special account when less powerful actors are concerned, such as citizen and minority sources, whose share in the trash-bin of the reporter may be dramatically higher than their share in the published content.

Reconstructions are blind to the blind spots of its interviewees and, as any human agent based testimony, they are prone to a series of biases such as social desirability, self-glorification, and underreporting of practices that may be perceived as reflecting poor occupational standards. Such biases might play a broader role when interviewees themselves are professional interviewers who live close to different façade builders. Interestingly, however, when Albæk (2011) double-checked reporters' and sources' accounts he found that they were almost perfectly congruent. Despite the abovementioned measures to mitigate potential biases, one should bear them in mind and hence aspire to triangulate reconstructions with other methods that are less interviewee-dependent, such as observations and content analysis.

Readers of this paper may ask themselves why this method is so intricate and nuanced. The first source of methodological nuance is the hybrid nature of reconstructions, combining an interview and a series of observations by proxy, in which the newsmaker is guided to re-observe the genealogy of a sample of items, and help code the results in a kind of a coding sheet format. The second source of this nuance is the sequence of nestedness (contact within items, within reporters, within news organizations) that requires careful handling in order to maintain representativeness.

Future studies should consider using reconstructions to explore emerging news actors, actants and activities. They should also consider applying reconstructions to other fields that maintain complex, repetitive and sufficiently significant social and cultural processes, such as in cultural production, research and development, legislation and policy making. Studies that wish to focus on news practices are expected to address bifurcating trends. On the one hand, becoming increasingly digital, newswork may leave more digital footprints that can be followed by researchers, using process-mining methodologies, minimizing dependence on journalists' accounts. On the other hand, as news processes are becoming more dematerialized and ephemeral, scattered over growing numbers of platforms, integrating these digital footprints may become a forensic challenge that would be hard to reconstruct reliably without the newsmakers' testimony.

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