The Positions of Data-Related Peripheral Actors in Journalism Practice

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With datafication, newsroom practices have become increasingly data driven. As a result, various peripheral actors from the field of technology now play a recognized role in journalism practice as invited experts. This article analyzes how data-related peripheral actors foster and maintain engagement with journalism. It draws from practice and positioning theory to advance our understanding of how technologists working at external data companies position themselves in relation to journalism practice and how they may transform journalism as a result. The study is based on the "practice stories" of 9 individuals, including data analysts, engineers, consultants, and managers providing data analytics services for Finnish newsrooms. A narrative positioning analysis was conducted to assess how these actors negotiated their possibilities and duties in relation to journalism. Data specialists' positions are ordered by 3 anchoring practices: quantifiable knowing, product innovation, and project-based consulting for news organizations. This study enhances our understanding of peripheral actors' positioning as a relational and variating phenomenon.

Keywords: audience analytics, data specialist, journalism, peripheral actors, positioning, practice story, practice theory

Datafication has emerged as a key element in how digital journalism is being produced, delivered, and consumed, involving various technology, platforms, and data companies (Porlezza, 2024; Simon, 2022). Loosen (2018) identified four mutually dependent forms of datafication in journalism: how data are used as a *source for reporting* in data journalism, how algorithms are used for *news distribution*, how news *production is being automated*, and how data about *audience behavior* via metrics use shape newsrooms. In this study, I examine the datafication of journalism by starting with the fourth form, audience data, but because of the mutual dependence, the argument also extends to forms of automation and distribution, albeit *not* to the work of data journalists who work with original stories and use all sorts of (openly available) data. The study's focus is on third-party technologists who work with Finnish journalistic organizations to consult on or provide data products (e.g., audience analytics).

We know that audience analytics programs have played an influential role in a wide range of news practices, including the allocation of resources, news production volume and rhythms, selection and placement of topics, and formats and styles of news presentation (Fürst, 2020). Petre (2018) argued that

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data analytics companies, such as Chartbeat, have been successful within news organizations because, for managers, they offer measurements for boosting revenue, and for journalists, they provide emotional reassurance about how well they are engaging with audiences. However, the role of analytics, especially how their use may diminish journalistic autonomy and increase market orientation, is still criticized and debated in newsrooms (Cohen, 2019; Penttilä, 2024). However, instead of "explicit managerial coercion" (Petre, 2018, p. 522), the use of data companies' tools has resulted in soft forms of management and guidance in newsrooms (Ahva, Salonen, Ovaska, & Talvitie-Lamberg, 2024).

Indeed, Zamith, Bélair-Gagnon, and Lewis (2020) argued that external data analytics companies' *direct* impact on newsrooms might have been overestimated in the early years. According to their survey of U.S. newsrooms, direct influence in the form of training from third-party companies was limited. However, a more notable *indirect* impact was evident in how analytics companies provided technological affordances for daily work (Zamith et al., 2020; see also Wu, Tandoc, & Salmon, 2019, p. 1249). It is this subtle yet transformative impact that the article further explores by focusing on instances in which data analytics experts work with or for newsrooms.

Existing journalism research has examined the impact of analytics companies and other technologists on journalism through the notions of *interlopers* or *peripheral actors* because of their status as nonjournalists who have moved closer to journalism's core and imported qualities to the field that do not originally stem from journalism (see Eldridge, 2019; Holton & Bélair-Gagnon, 2018; Tandoc, 2019). These actors have become important because "decreasing audience numbers, financial pressures, and new communication technologies" have forced the field to innovate with their help (Hanusch & Löhmann, 2023, p. 1292). The framework of peripheral actors looks at the situation from the perspective of traditional journalism at the core. Nonjournalistic actors are positioned at the opposite end of the continuum; hence, their description of these actors as peripheral (Heinrich & Cheruiyot, 2024, p. 4). However, their proximity to traditional journalism varies (Hanusch & Löhmann, 2023, p. 1305).

Peripheral actors' activities about journalism need to be addressed, as they may have a bearing on journalism's knowledge production and public life at large (Hanusch & Löhmann, 2023; Heinrich & Cheruiyot, 2024; Tandoc, 2019). They can both contribute to journalism's evolution and disrupt its boundaries, either voluntarily or involuntarily (Chua & Duffy, 2019, p. 112). In the case of audience data, analysts and other peripheral actors interpret audiences' wants and needs for newsrooms, granting them epistemic authority over the journalism–audience relationship (Vulpius, 2023; p. 10; see also Gieryn, 1999). This article illuminates how such authority is being constructed.

I work with the notion of peripherality instead of interloping, as the latter in my reading seems more suited for studying actors *claiming* belonging to journalism (Eldridge, 2014, p. 2), whereas the broader notion of peripherality opens the possibility to scrutinize the positioning of actors who have been invited to work with newsrooms as experts not necessarily claiming belonging to journalism (cf. however, the notions of *implicit interloper* and *intraloper*; Holton & Bélair-Gagnon, 2018). With my research design, I can also contribute to the ongoing theoretical discussion on nuancing and layering the notion of peripherality as a relational and dynamic construction (Hanusch & Löhmann, 2023) by showing how data specialists' position-taking unfolds.

Namely, according to Hanusch and Löhmann's (2023) review, peripheral actors' varying positions are typically examined in three dimensions. First, there is the field and its *structures*—a dimension that examines how technology, politics, and business shape journalism at a macro-level when fields overlap (see also Eldridge, 2019, p. 10). Second, individual *identities* are examined, especially how peripheral actors challenge expertise, training, and belongingness in journalism. Between these lies the meso-level, focusing on the dimension of *practice* that pertains to peripheral actors' competences, routines, and innovations. Hanusch and Löhmann (2023) argue that variance in peripherality may be better understood by examining individual actors' or actor groups' different position constellations along these three dimensions (pp. 1305–1306). Positioning within these dimensions is always relational, contextual, and dynamic, as actors' placements on the dimensions evolve over time.

In this article, I aim to bring nuance to our understanding of data-related actors' present positioning on the core-periphery continuum. Initially, they appear as a peripheral actor group, distant from traditional journalism across all three dimensions. However, closer examination reveals their need to navigate closer to the core in some dimensions. Furthermore, I will focus on the perspective of the data specialists *themselves* to continue from where, for example, Bélair-Gagnon and Holton (2018) ended by examining European and North American analytics providers. They demonstrated how these actors viewed themselves as *disruptors* who spur newsrooms to rethink their business models, as *connectors* between journalists and audiences, and as *routinizers* of analytics into news practices.

This study taps into the last perspective, routinization, and deepens our understanding of the self-perceived position of data and analytics providers in the present Nordic context where newsroom routines have become increasingly data-driven (see Ekström, Ramsälv, & Westlund, 2022). This has normalized the access of various data specialists, such as data analysts, engineers, company managers, and data and AI consultants, into journalistic organizations. This article examines the practices shaping these actors' work with newsrooms to understand the transformation and boundaries of datafied journalism from their viewpoints. However, journalism remains a key reference point.

Literature Review: Technology-Related Peripheral Actors in Journalism

The literature on the impact of the technological field and its actors on journalism indicates a transformation. Some studies that address the structural dimension have not hesitated to conclude that the technological field can powerfully influence the news industry by controlling the technological infrastructure on which the industry depends (Simon, 2022). Simon (2022), referring to "big tech" and its AI services, argued that this happens because advantage is on the side of technological companies and platform-driven businesses due to news companies' relative structural weaknesses, including high costs, the difficulty in recruiting a skilled workforce, and restricted computational power (p. 1837). However, Poell, Nieborg, and Duffy (2023) nuanced the picture by adding that there is space for negotiation in how news organizations adapt to the conditions created by platforms, and such negotiations depend on the type of organization and the evolution of platform markets and their governance frameworks.

On the dimensions of identities and practices, it is possible to summarize four main areas in which technology-related peripheral actors' work is transformative for journalism. This literature has covered both

the external actors who work for newsrooms only via projects, services provision, or consultation (e.g., data analysts, NLP specialists and marketers, Wu et al., 2019; NLG and automation specialists, Sirén-Heikel, Kjellman, & Lindén, 2022; or app designers, Ananny & Crawford, 2015) and technologists who are employed by news organizations (e.g., "editorial technologists" working with Web development, visualization, or management, Lischka, Schaetz, & Oltersdorf, 2023; or designers, developers, strategists, and managers, Vulpius, 2022).

First, these studies suggest that such peripheral actors' involvement has shaped journalistic organizations' *workflows and news processes* by offering tools—for verification, content creation, transcription, and personalization—that aim to make newsroom work more effective from the gathering stage to the distribution stage (e.g., Bélair-Gagnon & Holton, 2018; Sirén-Heikel et al., 2022). Second, technology-related peripheral actors have brought with them an increased *focus on audiences* and their demands, in which user behavior is viewed as measurable and predictable through data analytics (Ananny & Crawford, 2015; Lischka et al., 2023; Petre, 2018; Vulpius, 2022). Third, an *emphasis on revenue* has been noted: technologists, particularly in data analytics and AI development, view themselves as key players in finding sustainable business models for journalism (Bélair-Gagnon & Holton, 2018; Chua & Duffy, 2019; Petre, 2018; Sirén-Heikel et al., 2022). Fourth, technological actors have shaped *journalistic values* by bringing in the logics of software design, dot-com entrepreneurship, and algorithmic thinking (Ananny & Crawford, 2015; Svensson, 2022), or the logics of "civic tech" and hacking if the actors come from nonprofit domains (Baack, 2018).

Although these studies have identified transformation in all three dimensions, pinning down *how* this is achieved and maintained remains tricky (Simon, 2022, pp. 1835, 1841). This is mainly because technological affordances are constantly being negotiated and appropriated against editorial values (e.g., Petre, 2018; Svensson, 2022). Hence, it appears feasible to scrutinize technologists' own interpretations of their work practices with newsrooms. This allows us to uncover how their subtle, transformative role is established.

Theoretical Framework: Practice and Positioning Theories

Practice theory allows for a suitable starting point for this study because it does not define journalism as a news production process carried out by professional journalists alone. Practice theory encompasses a family of theories that understand the social as comprising practices and their performance (Nicolini, 2013; Reckwitz, 2002). Hence, practice-theory-inspired journalism research characterizes journalism as an institution of fact-based communication constructed and maintained through practices (Ahva, 2016; Baack, 2018; Raetzsch, 2015). Here, journalism is not constructed via norms or roles (e.g., those of journalists), but via practices such as observation, selection, editing, and distributing (Ahva, 2016). This means that technology-oriented actors can also be viewed as practitioners of journalism when they engage in the above-mentioned or other practices that enable news publishing. This open-endedness allows me to conceptualize data specialists as *actors brought together* (see Baack, 2018; Nicolini, 2013, p. 94) with journalists through various data-related practices in newsroom development and considering their position-taking on the peripheral–core continuum as an empirical question.

In practice theory, practice is conceptualized as a regular social manifestation comprising the triad of activity, materiality, and meaning—the coming together of doings, things, and sayings (Ahva, 2016; Nicolini, 2013; Shove, Pantzar, & Wattson, 2012). When enacted recurrently, practices maintain stability and create structure: practices accumulate into bundles and start to "stick together," thereby appearing essential to the social domain (Raetzsch & Lünenborg, 2020; Shove et al., 2012; Swidler, 2001). An example of this is how the practice bundle of *measuring the audience* has started to structure news publishing to a degree that it makes sense to discuss the "measurability" of journalism and manage newsrooms accordingly (Cohen, 2019, p. 578). However, practices also change. If one practice in a bundle changes—or any of the basic elements in the triad—it causes variation in how the entire bundle is enacted, which eventually results in a change in structures, too (Shove et al., 2012). If an analytics program is replaced, for example, it alters what is measured, how measuring is conducted, and ultimately how journalism is discussed.

In the context of this article, the idea of "anchoring" from practice theory appears as a key to understanding what allows and maintains the involvement of data specialists in journalism. According to Swidler (2001), anchoring practices are the underlying, nearly invisible practices that order, control, and orchestrate other practices in a bundle. They help people enact and coordinate basic social relationships. However, they are never explicitly formulated as rules, but are instead elaborated through myths and stories (Swidler, 2001, p. 97).

Even if anchoring practices coordinate social relations, they do not offer uniform or neutral subject positions to all. Some people have more advantageous positions within the practices, which also allows them to shape others' capacities to act (Watson, 2016, p. 179). Nicolini (2013) argued that "[T]he practice which brings practitioners together also divides them, as all practices have, by definition, a plurality of positions and voices" (p. 94). Hence, actors must actively negotiate their positions, do *positioning* (Davies & Harré, 1990), in relation to practices they engage in and to other involved actors to be able to gain legitimacy (Bamberg, 1997).

I therefore suggest positioning theory as a feasible addition to practice theory. Harré and van Langenhove (1999) summarize positioning theory as "the study of local moral orders as ever-shifting patterns of mutual and contestable rights and obligations of speaking and acting" (p. 1). Positioning is thus concerned with understanding how individuals gain or negotiate access to the possibilities and duties to say and do things (Kayi-Aydar, 2021, p. 2). The resulting positions then provide resources for actors' performance of further practices (Deppermann, 2015, p. 382). Thus, by examining how data specialists conduct positioning, I may also be able to detect anchoring practices that define how they act on and transform journalism.

As a socio-linguistic concept, positioning sheds light on practices through one of the elements in the practice triad: meaning. It focuses on how participants discuss their practices (Browne, 2016): what they say they are involved in and why, as they act in specific material contexts. In this case, I can examine how data experts place themselves as legitimate actors in journalism-related work practices and projects, and whether such legitimacy is connected to them being central or peripheral to journalism.

The research questions are as follows:

RQ1:   How do data specialists position themselves in relation to Finnish journalism practices?

RQ2:   How do these positions allow them to engage with and transform journalism?

Research Design: Practice Stories and Narrative Positioning Analysis

The socio-cultural context of the study is Finland, a Nordic country at the forefront of applying data analytics in journalism, where development has gravitated heavily toward subscription-based business models (Ahva et al., 2024). Nordic audiences seem more willing to pay for online news and are more loyal to traditional news media brands than other regions' populations (Schrøder, Blach-Ørsten, & Eberholst, 2020). Although the Nordic media system remains a relatively stable combination of journalistic professionalism, media subsidies, and a broad-reaching media market, the digital transformation has nudged the system in a more liberal direction by decreasing regulation and increasing media group consolidation (Ohlsson, 2015). Finland is thus comparable with other Nordic countries, but the results are also relevant to other regions and journalism cultures where subscription metrics play a central role.

The empirical data were gathered by interviewing nine external technologists who had worked with Finnish newsrooms. I identified informants and/or their companies through background interviews with newsroom managers from nine key Finnish news organizations.[1] I asked them about the external companies they worked with, thereby creating a pool of informants. Given the wide-ranging practices related to data-driven news work, the method produced a heterogeneous sample of practitioners who can best be described as third-party data professionals in charge of audience data collection, analysis, consultation, management, use, and marketing. Here, I refer to them as *data specialists*. What ties the informants together is that they have worked for or with Finnish news organizations even if they were not all located in Finland.

The interviewed data specialists represent seven distinct companies, all based in the Nordic region, and they are characterized in more detail in Table 1. Four were employed by consulting firms that supply corporate customers with bespoke solutions subject to charging on an hourly basis, and five worked for companies selling products or data services. Male respondents dominated the sample, which reflects the gender division in technology consulting (Peterson, 2005). Most companies served several sectors, and accordingly, only the CEO and developer in Practice Story 4 (Table 1) represented a firm oriented strictly toward journalism. The sample is relatively small because of the limited scale of the Finnish news media industry. The background interviews directed me to these key data companies and their representatives.

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[1] This background data set comprises transcripts of nine semistructured interviews from December 2020–February 2021 with editors, managers, digital-domain specialists and analysts working at two Finnish tabloid newspapers, one broadcasting company and six national or regional newspapers.

Table 1. The Interviewed Data Specialists and Their Chosen Cases.

Practice story ID	Practitioner's job description	Gender	Company origin (interview language)	Case addressed by the Practice Story
1	Principal consultant on data and AI; data scientist	Male	Finland (Finnish)	Consulting for data-led management of a large media organization
2	Business-unit director; founder	Male	Sweden (Finnish)	Development and sales of a mobile analytics app for newsrooms
3	System architect and software developer	Male	Sweden (English)	Development of a mobile analytics app for newsrooms
4	CEO and developer	Male	Norway (English)	Development, sales, and support work on an analytics tool for news organizations
5	Head of customer success	Female	Finland (Finnish)	Sales of an analytics product for news organizations
6	Data engineer; consultant	Male	Finland (Finnish)	Development of an analytics dashboard for a large media organization
7	Director of data and analytics	Male	Finland (Finnish)	Provision of data-governance services for media organizations
8	Data and AI consultant; founder	Male	Finland (Finnish)	Development of an editorial bot for a large newsroom
9	Data and analytics consultant; senior partner	Male	Finland (Finnish)	Introduction of analytics to a large newsroom

I secured informed consent from participants verbally on record and informed them about the ethical management of the research data.[2] The interviewees, their employers, and the customer organizations were all assured of anonymity under conditions established to discuss their work without revealing sensitive information. The interviews, conducted between March and October 2021, followed a

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[2] This study is a part of a project "The Future of Dispersed Journalism" funded by The Research Council of Finland (Grant No. 333503). The entire project followed the Finnish National Board on Research Integrity Guidelines (2019). Accordingly, the project was not reviewed for ethics even if it pertained to human participants because it did not involve minors or other vulnerable groups and was not viewed as causing risks, nor applying intrusive methods.

"practice story interview" mode where the researcher examines professionals' practice-focused narrative accounts (Forester, 1993, p. 2012). This method has been developed in the context of city planning, and it produces stories where practitioners talk about their work in concrete terms but in ways that preserve the vividness of their actual wording, voice, and tone (Forester, 1993). This aligns them with practice theory and makes them suitable material for positioning analysis, which requires textual and tonal detail.

The practice story method focuses on cases (Forester, 2012). My interview invitation requested that the data specialists select a case or project that stood out as memorable. This framing resulted in participants choosing an episode they found interesting yet challenging. Although the set of cases covers broader data-related projects—for example, consultation for data-led management or provision of data-governance services—an emphasis was on audience analytics (Table 1).

The interviews followed a three-part structure: clarifying personal background, discussing the particulars of the case, and reflecting on it. They lasted about 90 minutes each and were conducted and recorded through a remote video connection because of Covid-19 restrictions. The understanding of practices as combinations of doings, sayings, and materials guided how I planned and conducted the interviews. The practice story framework encourages the researcher to guide the interviews toward the concrete and descriptive (Forester, 2012, p. 16). To this end, Forester (2012) and his colleagues (Forester, Peters, & Hittelman, 2005) advise employing such tactics as asking "how," "with whom," and "what then," rather than "why" questions. The method features the step of moderately editing the interview transcripts into stories. This involves reorganising paragraphs and omitting repetition, filler words, and questions (or leaving them in brackets if needed) to accentuate the informant's own story (Forester, 2012, p. 15). Finally, the interviewees can always check and approve the texts to ensure that their stories are captured accurately (Forester, 1993).

I then applied narrative positioning analysis in terms of the four categories proposed by Bamberg (1997, 2011). The categories stem from these four themes: How people position both (1) *themselves* and (2) *others*, as well as how they become (3) *positioned by others* and (4) *by structures and normative discourses* in their own words*. To analyze the first two categories, "Me about myself" and "Me about others" (see Table 2), I directed attention toward moments of naming or attributing, appealing to categorical memberships (Kitzinger & Wilkinson, 2003, pp. 174–176) and using metaphors (Davies & Harré, 1990). To analyze the latter two, "Others about me" and "Structures about me," I unpacked moments of quoting, paraphrasing, or mimicking, and the use of the passive voice and evaluative or normative vocabulary (Deppermann, 2015, p. 376). Finally, I traced patterns *across* the categories to find anchoring practices.

Analysis of Data Specialists' Positioning in Relation to Journalism Practice

In this section, I address RQ1 about the data specialists' positions and present the results across four main positioning categories. One practitioner could adopt multiple position types, meaning that they are not mutually exclusive. I focus on the three most distinctive. The analysis results are structured according to Table 2 along the horizontal axis.

Me About Myself: Data Specialists' Self-Positioning

In the first category, data specialists referred to themselves and their home companies. I denoted the first and clearest position type as *the professionally proud helper*. When talking about themselves, the specialists referred to acts of assisting newsrooms through their expert knowledge of data, whether pertaining to data architecture, strategies, or algorithms (see also Lischka et al., 2023, p. 1034; Wu et al., 2019, p. 1246). The director of data and analytics in Practice Story 7 stated, "We aim to help the customers organize themselves around data and to help them create a culture of data to enhance their internal practices." Such non-journalistic expertise with data was clearly also a source of professional pride and motivation for these specialists.

Table 2. Summary of the Positions in Four Categories.

Positioning category	I Position type	II Position type	III Position type
1. Me about myself	Helper with professional pride	Developer–marketer	Internal outsider
2. Me about others	Newsrooms as insecure	Journalists as end users	Managers as entry points
3. Others about me	Target of requests	Service provider	Trusted partner
4. Structures about me	Being part of inexorable datafication	Benefitting from innovation demand	Distancing from mysterious journalism

The second self-positioning type in the first category is that of *a developer and marketer of tools.* Interviewees frequently situated themselves through activities such as inventing a "helpful tool for their [journalists'] everyday work" (system architect, Practice Story 3). They associated this with concrete skills; for example, storing, processing, organizing, modeling, and interpreting data. This positioning emphasizes experimentation and exploration (Bélair-Gagnon & Holton, 2018, p. 505), alongside the required access to large volumes of data through which the tools may be tested and developed further. The interviewees also portrayed the tools as products that need to be marketed to newsrooms (see also Petre, 2018), thereby demonstrating that not all of the aforementioned "helping" was an outgrowth of existing needs, i.e., some needs were actively created, as the head of customer success in Practice Story 5 indicated:

> We have an insanely good marketing team who can create needs for the customers that they didn't even know they had. Our salespeople do their tricks, and then the customer realizes that the tool is good for them, and they take it. And, honestly, often they recognize the value of the tool only after they have started using it.

The third position that emerged was the *internal outsider*, which refers to how data specialists viewed their roles as valuable but temporary for customer organizations. This echoes Bélair-Gagnon and Holton's (2018) findings in terms of web analytics managers viewing themselves "close to, though not fully inside" of the news organizations (p. 503). Narrative elements in the stories attested to the value accorded to being able to "embed" oneself in the customer organization (data and AI consultant, Practice Story 8) or

being "on the same side" (director of data and analytics, Practice Story 7) as the customer. Such proximity (Chua & Duffy, 2019) was regarded as useful for creating well-focused projects with impact. The outsider aspect to this position type, in turn, became evident through negative expressions of belonging whereby data specialists typically emphasized *not* being journalists themselves, even if it was not directly asked (see also Sirén-Heikel et al., 2022, p. 362; Wu et al., 2019, p. 1247). For example, the director in Practice Story 2 said, "I don't have any background in journalism, and I want to be careful to say that I am not an expert in that field."

Thus, the data specialists positioned themselves as temporary insiders in the organizations on the structural dimension, but as outsiders on the identity dimension. Status as an insider and outsider simultaneously was evidenced further by how the "we-talk" of the practice stories fluctuated. "We" sometimes referred only to the data company's employees, but at other times, it encompassed those from the journalistic organization as well, in a valence shift that could occur within a single line of thought.

Me About Others: Data Specialists' Positioning of Journalistic Actors

Next, I focus on how the data specialists positioned the journalistic actors with whom they worked. The first position type concerns journalistic actors as collectives, where *newsrooms appeared as insecure* in the data domain. In the narratives, newsrooms needed support with many kinds of data-related issues, from mundane tasks to leadership. Because of the poor knowledge of data, journalists in newsrooms were often viewed as unaware of what they could request from a data specialist. The business-unit director behind Practice Story 2 crystallizes this by noting that newsrooms "don't know how far we have already gone with data."

Whereas the first positioning type of other actors pertains to collectives, the second situates the individual journalist. Seeing *a journalist as a distant end user* refers to how a journalist is viewed as the main beneficiary of data tools, particularly in the context of audience analytics (Petre, 2018; Vulpius, 2022). However, distancing simultaneously was visible because as end users, journalists were addressed only indirectly and through products such as mobile apps or dashboards. Here journalists were cast as product testers who were observed, but not collaborated with. One consultant was keenly aware of this: "Should I do this all over again, I would make it clearer that the project should take place closer to users" (data engineer, Practice Story 6). Polarization was also apparent in the portrayal of the end users; journalists were presented as either very excited or defensive. Such polarization made it difficult to predict how journalists would react to data services and was hence another reason for data specialists to distance themselves from the journalism profession on the dimension of practice.

The third way of positioning journalistic actors in the stories entailed *newsroom managers as entry points* to journalistic organizations. For the data specialists in my study, managers were the primary stakeholders to convince, as the new product would be sold to them (see also Zamith et al., 2020). When the mandate for a project followed, managers became important allies of the data specialists (see also Lischka et al., 2023, p. 1035), unlike the unpredictable journalists. Although presented as still learning how to really lead or structure the organization using data, managers were given credit for being "fully awake"

(data and analytics consultant, Practice Story 9) about the general direction that would need to be taken with data-driven news work.

Others About me: Journalistic Actors' Positioning of Data Specialists

In the practice stories, the data specialists on occasion paraphrased or mimicked something that journalistic actors had said about them. In this way, "others" also positioned "me" in the narratives along the third position category (Bamberg, 1997; Table 2). Here, the interviewees first characterized journalistic actors placing them as *targets of requests* because of their knowledge. Interviewees mentioned situations in which journalistic actors craved answers. As the data and analytics consultant in Practice Story 9 put it: "There were individual reporters, editors and managing editors, even the strategy department who wanted something [from me] […]. Suddenly, they all realized that this is the address to go to, so the surge of questions was huge."

The stories revealed that journalistic actors had inflated expectations of how data specialists could help them. In these instances, data specialists were almost perceived as superhumans by the journalistic actors, similar to how editorial technologists in Lischka et al. (2023) discussed journalists describing coding as "magic" (pp. 1033–1034). For example, in Practice Story 4, a CEO and developer said he was sometimes "received as a hero" in newsrooms. He also pointed out that some managers might even expect data specialists to tell them which metrics to choose as key performance indicators (KPIs, the metrics chosen to be followed most closely to be successful) even if they find such decisions to fall within the purview of the managers themselves.

In the second "others about me" positioning type, journalistic actors are seen to assign data specialists to be *service providers*. This position is oriented toward products, rather than experts' knowledge, and it is more polarized than the position described above. It involves journalistic actors, mostly journalists, providing outspoken customer feedback about the services. Although interviewees stressed that feedback is generally a necessary part of innovation processes, some found it unnecessarily harsh when journalists viewed the services as intrusive, reductionist, expensive, or noncreative (for stress and criticism caused by metrics, e.g., Ahva & Ovaska, 2023; Cohen, 2019). However, laudatory feedback was also cited; for example, newsrooms sometimes celebrated the projects as "showcases" (as in the case of the data-led management model addressed in Practice Story 1).

The stories also described how journalistic actors situated data specialists as *trusted partners and stimulators* in the development of data-related journalism. Here, informants described how journalistic actors needed them to inspire or spur their work, but for this to happen, trust needed to be earned through a lengthy process. According to the principal consultant in Practice Story 1, this is crucial because only after gaining trust can one obtain the resources required for consultation to bear fruit. Several of the cases presented in the practice stories had occurred after the consultants had become deeply embedded within the news organizations, some over many years. Here, the customer relationships entailed physical and temporal proximity (Chua & Duffy, 2019, p. 119), which included spending several days a week at the journalistic organization's facilities. In long consultation relationships, working alongside the in-house team began to blur the distinction between internal and external specialists.

Structures About Me: Structural Positioning of Data Specialists

The final part of the positioning analysis deals with positions articulated by being subjected to structures or other relatively fixed elements. I focused on the data specialists' references to norms, rules, resources, or material restrictions, as identified through expressions of necessity or the use of passive voice. The first pattern I recognized concerned *the inexorable process of datafication* within which the data specialists positioned themselves. This placed them, particularly their firms, as having the upper hand in being able to choose their customers. Given this role, most of the data companies in the sample served various sectors, for example, the public sector, heavy industry, or tourism. Data and AI consultant in Practice Story 8 summarized it: "It is data. My point here is that the patterns are quite similar all over." However, journalistic actors had not necessarily realized this, which was noted with a hint of humor by the head of customer success in Practice Story 5: "Journalists tend to think [--] that no one else anywhere has ever gone through such issues [with data]."

In these stories, the media industry overall was viewed as better prepared for datafication than the heavy industry because it was already working on digital outlets. However, the journalism arm of the media sector had adapted more slowly than the marketing arm. The second structural element stemmed from these conditions: *The demand for innovation* within journalism units. Informants stated that resources seem available for developing new products while there is less to spare for maintaining existing systems. This reflects a hunger for innovation (Chua & Duffy, 2019) that positions data specialists as pioneers who can guide journalism into the future (Hepp & Loosen, 2022). The data companies had benefited from showcase products in the journalism sector, affording them advantages elsewhere in a competitive tech market (see also Wu et al., 2019, p. 1245). However, such branding benefits were typically conferred at the firm level, while individual data specialists as innovators often performed tightly focused, project-based consulting in which their customers had the upper hand of changing one consultant to another (see also Peterson, 2005). In Practice Story 1, the principal data and AI consultant offer an example of the limits to what he can propose from his position as a contract-based individual. He is expected to invent "tools" even if he would like to see his work as part of a bigger framework of data-led management: "You can't do anything that isn't ordered from you or regarded as a priority by the customer. [--] You just need to invent the tools and get over it."

The final structural element that emerged as a positioning force was viewing *journalism as something mysterious*. Even though they valued journalism as a form of public communication, the interviewees experienced a sense of the unknown in the professional culture of journalism and how news organizations are managed. For example, in terms of the profession, the business-unit director in Practice Story 2 said that the principles of news selection remained a "big question mark" for him. Even the organizations were viewed as "fuzzy" (data and AI consultant, Practice Story 8) and their internal units "disparate" (principal data and AI consultant, Practice Story 1), and such factors left the news organizations appearing mysterious as well. Subject to this structural constraint, the data specialists indicated that it was sometimes difficult to know whether they were heading in the right direction in the projects. However, such fuzziness also enabled action. Those actors—journalists and non-journalists alike—who understand informal decision-making structures can take control, as the data engineer and consultant in Practice Story 6

hypothesized: "If there isn't any formal decision-making, then, cynically thinking, the ones who know the [decision-making] system best and can also play the system best, and they get to have their way."

However, because journalistic actors know their profession and organizational decision-making patterns better than data specialists, the mysteriousness in this position type presents the data specialists as less authoritative than journalists. The projects data specialists work on leave little room for gaining a deeper understanding of journalism or engaging with its professional core along the practice dimension.

Tracing the Anchoring Practices: Knowing, Innovating, and Consulting

Above, I elaborated on my findings on data specialists' positions by following each positioning category horizontally according to Table 2. To address RQ2 on how these positions allow data specialists to engage with and transform journalism, we need to turn our attention to the vertical axis. Starting from the self-position types—the helper, developer–marketer, and internal outsider—and moving downward, we find patterns that reveal the anchoring practices that order and maintain (Swidler, 2001) these data-related peripheral actors' engagement with journalism.

Let me first elaborate on the anchoring practice named *quantifiable knowing*, which deals with data specialists' competencies and roles as epistemic resources for newsrooms (Vulpius, 2022) and hence pertains to Hanusch and Löhmann's (2023) dimension of practice. This anchor stems from the self-positioning of data specialists as helpers. Hired to do work for journalistic organizations whose members they view as insecure in their knowledge of data, data specialists become important assistants and, thus, are targeted with questions and requests. This allows opportunities for data specialists to articulate meanings for data in journalism that stem from their disciplines' ways of knowing (Lischka et al., 2023) and are hence based on quantifiability, measurability, and predictivity (e.g., Christin, 2020; Porlezza, 2024). This may happen, for example, by being asked to specify the criteria that news organizations could use to judge their success. The data specialists seem pleased to act as helpers because they are proud of their professional skills and motivated by being able to impact journalists' everyday work (see also Bélair-Gagnon & Holton, 2018, pp. 501–502) in a context where datafication appears inevitable.

Second, the practice stories revolved around the anchoring practice of *innovating products,* for example, developing programs, platforms, apps, and data-management systems. It orders the actors' placement in relation to journalism along the dimensions of practice and structure. In a thread that follows from the data specialists' second self-positioning type as developer–marketer, data-related products (see also Hepp & Loosen, 2022, p. 127) are the key material means of gaining access to journalism. These data products clearly meet news organizations' needs to find new business opportunities via innovation. Data specialists sense this hunger and turn it to their advantage, as Bélair-Gagnon and Holton (2018) also found (pp. 499–500). Particularly in the stories by experts from more prestigious data companies, active marketing appeared unnecessary, but interacting with individual journalists who could have either very high hopes or very critical attitudes about the products required more effort and convincing.

The third anchoring practice coheres around temporary membership, and I refer to it as *consulting.* This stems from the self-position of internal outsiders. Data specialists gain provisional roles as insiders in

relation to news organizations (structural dimension) but remain outsiders to journalism as a profession (identity and practice dimensions). In this line of interpretation, newsroom managers become positioned as key door-openers and partners for data specialists. This echoes what Lischka et al. (2023) found concerning internal editorial technologists' views on the need to have more newsroom managers "who think like they do" (p. 1035). In many ways, managers already think like technologists, as they communicate more often (Zamith et al., 2020) and jointly define the goals of the projects. In Finnish newsrooms, the past 20 years have witnessed the rise of a corresponding manager-led and project-based work culture in which problems are tackled with the assistance of external consultants (Kunelius & Ruusunoksa, 2008). My analysis points to a link between such a project-based work culture (see also Hepp & Loosen, 2022) and data specialists' transformative capacities.

Conclusion

In this article, I have addressed how data specialists position themselves in relation to Finnish journalism practices, and how these positions allow them to engage with and hence also transform journalism in accordance with three key anchors. To conclude, I will elaborate on how the results nuance our understanding of technology-related peripheral actors' positioning in relation to journalism and their authority over it.

This research sheds light on the relational nature of peripherality and enables us to understand how positioning on the core-periphery continuum variates for a single actor group. This is because the three identified anchoring practices organize the groups' position constellation and hence its overall relationship to journalism slightly differently (Hanusch & Löhmann, 2023, pp. 1304–1305). The examined data specialists use their peripherality for constructing their authority, especially about their competences, identities, innovation skills, and change mentalities. However, in work situations, they must also actively negotiate their way closer to the core of journalism as organizations to be able to do the work they have been hired for. Furthermore, peripherality about the values of journalism creates confusion.

To sum up, the anchoring practice of *quantifiable knowing* allows data specialists to view themselves as knowledgeable actors aligned with the trend of datafication that journalism must embrace to survive. Here, data experts appear to be authoritative actors who possess essential knowledge for journalism practice. A sense of inexorability is a vital part of the process through which doors are opened for data specialists (for a discussion of AI solutions' related inevitability, see, Sirén-Heikel et al., 2022, pp. 360–361). Finnish news organizations are on the way to becoming data-informed in many of their key activities (Ahva et al., 2024), and they recognize that this path must be taken because of economic imperatives (see also Bélair-Gagnon & Holton, 2018; Petre, 2018), but they still appear as insecure. Thus, technologists respond to newsrooms' information needs with their knowledge of data science and engineering, and journalistic actors become reliant on their way of knowing. The anchoring practice of knowing is a key element in granting the data specialists epistemic authority (Gieryn, 1999) to transform journalistic practices by presenting journalism as *measurable*, and hence something that their competencies can master (e.g., Christin, 2020, p. 1124; Cohen, 2019).

The anchor of *innovation* especially shows how much data specialists' placement in terms of the periphery and core fluctuates. The journalists are viewed by data specialists as users or testers of their products, and detachment with a slight negative charge characterizes their relations. This is enhanced further by the unpredictability stemming from the disparity between journalists' unrealistic hopes and sharp criticism. Thus, a shared interpretation among the data specialists is that journalism, as an industry branch, is a complicated sector to work with (see, Sirén-Heikel et al., 2022). These elements emphasize the data specialists' peripherality in the practice dimension. However, because journalism constantly wrestles with new formats and innovation (e.g., Chua & Duffy, 2019), this enduring clash pushes data-related actors closer to the core along the same dimension—at least it keeps the doors open for continuous product development (Bélair-Gagnon & Holton, 2018)*.* In the end, on the structural dimension, data specialists transform journalism by designing and selling novel technological solutions to improve news organizations' *profitability*, which also confers on them the authority to define what appears economically promising in journalism (see Wu et al., 2019, p. 1248).

The third anchor consists of *consulting*, and here, data specialists position themselves as peripheral on the identity dimension because it is beneficial for them. They are periodically being asked (and paid) to know more than the customers because they are outsiders—professionals with training and experience from another field. Hence, technologists do not want to be identified as journalists, even if they benefit from knowing how journalistic organizations work (see also Ananny & Crawford, 2015; Sirén-Heikel et al., 2022). If they succeed in this, they can engage with journalism through temporary episodes and take part in transforming newsrooms' work cultures as *project-based* (Hepp & Loosen, 2022). From such a position, technologists can also deny any responsibility if editorial dimensions blend into their work (Bélair-Gagnon & Holton, 2018, p. 502). This structurally peripheral position benefits the entire consultancy sector, which manifests much less regulation and liability than customer organizations' own endeavors (McKenna, 2006). Simultaneously, individual consultants who navigate within the news organizations' decision-making structures sense the need to fit in, but acquiring a basic understanding of journalism's professional culture and decision-making structures is a secondary—and difficult—task for them. Thus, key facets of journalism remain mysteries to data specialists. This, in turn, needs to be realized by journalistic actors to avoid relying too heavily on consultants' expertise in significant editorial decisions.

A limitation of this research is that because of the small sample and the analysis method, the results are not generalizable and cannot reveal how *much* the data specialists possess transformative authority. Regardless of these limitations, this research delineates *where* and *how* data and journalism intersect so that subject positions emerge for data specialists to transform journalism. The findings also suggest that practices emanating from the technology field mesh with those of journalism and may end up structuring the field in the long run (see Shove et al., 2012; Swidler, 2001); it can become difficult to practice journalism without quantifiable knowledge, constant product innovation, and project consulting. However, more research is needed to assess how persistent these practices remain in the field of journalism.

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