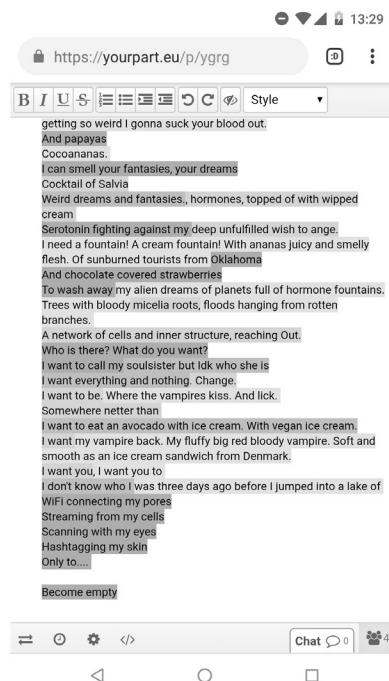


# In the Spirit of Addition: Taking a 'Practice+' Approach to Studying Media

Magdalena Götz, Sam Hind, Danny Lämmerhirt, Hannah Neumann,  
Anastasia-Patricia Och, Sebastian Randerath & Tatjana Seitz  
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The cover image consists of three screenshots taken by Magdalena Götz related to the art workshop "Weird Read Intensive" led by the artist duo Dorota Gawęda and Eglė Kulbokaitė, founders of the Young Girl Reading Group (YGRG).

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## Agre's Interactionism

Sam Hind & Tatjana Seitz

### Introduction

Philip Agre has become a key thinker in certain strands of media studies, especially on data collection and processing (Sprenger 2018), platform labour (van Doorn & Badger 2020) and algorithmic culture (Rieder 2020). In much of his work he is interested in the everyday practices of modern-day workers: from those in call centres and office jobs, to those in fast food restaurants and airports. Yet, whilst Agre has done much for the study of how work practices have changed with “computerization”, he is rarely described as a theorist of practice. Rarer still, is an understanding that Agre has developed any kind of comprehensive theory of practice. In this paper we hope to provide the first steps towards attending to these issues, by looking towards Agre’s articulation of the relationship between practice and computational representation, or what he refers to as “interactionism”. We do so principally, by considering his “novel vision of work-discipline” he calls the “empowerment and measurement regime” (Agre 1995: 167). Our hope is two-fold. Firstly, that this analysis of Agre’s interactionism can complement other more familiar practice approaches, from Garfinkel (1967) to Schatzki (Schatzki et al. 2001), by providing an account of how digital technologies iteratively shape, manage, and control practices. In other words, how they structure and formalize activities. Secondly, in doing so, Agre’s technical focus on system design (beyond Agre [1994]) is appreciated as methodologically useful to the study of contemporary issues around digital practice, accountability, and power. We provide a preliminary insight into the application of Agre’s interactionism with reference to two cases: social media APIs and automotive navigation systems.

### The Politics of Accountability

In *From High Tech to Human Tech*, Agre (1995) examines an emerging discourse within management and information technology, which he diagnoses as an “empowerment and measurement regime”. In a business context, empowerment “refers to a process by which employees are freed of bureaucratic constraints and given control of their work in order to make decisions and reorganize their local-work processes in accord with their own judgement” (1995: 170). A key facilitator of these processes has been what Agre (1995: 178) refers to as “distributed computer technology”: Apple’s desktop model as oppo-

sed to the “centralized world of IBM” (1995: 177). Measurement, in the context of this regime, is the process by which the (work) activities of the “empowered” employee are captured and fed back into the modulation, and management, of these activities. As Agre (1995: 176) contends, whilst these two processes of empowerment and measurement are well-known within business, they are “rarely identified as a single, coherent system”. Agre’s synthesis is an attempt to codify a relationship between empowerment and measurement, practice and representation. In other words, to not only contest the claim that empowerment is the freedom to make decisions, but to articulate how distributed decision-making is enabled by “simultaneously centralizing control through measurement” (1995: 179).

But what are the kinds of practices that Agre has in mind, and what tangible effect does their representation have on the practices themselves? Agre’s point of departure is the proposition that during transitional phases, in which established routines are rearranged, “many things [become] visible which are ordinarily obscured” (1995: 190).<sup>①</sup> For Agre, writing in the mid-90s, the desktop computer was responsible for this rearrangement, handing workers new possibilities to do things. To elucidate these rearrangements, Agre looks to Lucy Suchman’s (1992) sociological work. However, Agre takes up Suchman’s analysis not only for her rigorous analysis of computer-mediated office work, but also for translating “Garfinkel’s critique of sociological representation into a critique of computer system design” (Agre 1995: 186). In this, Agre sympathizes with Garfinkel’s insistence on the materiality of representation (see, 1995: 185). Rather than speaking of representation in general, Garfinkel’s interest is in how people use representations in their specific everyday activities. That is, in practice.

In her analysis Suchman (1992) explicates the role of technology in coordinating the operations of an airline at a regional airport, and how workers “account” for the work they do in managing aircrafts, passengers, and baggage. As Agre suggests, this accountability “is not just a formal relationship or an outside force, but a practical process of exhibiting reality” (Agre 1995: 182), in which workers are engaged in the “process of representing the[ir] work” (1995: 182), such that this accountability becomes work in itself. As this “new style of work is heavily ‘staged’” (1995: 182), i.e. the product of a meticulous design process, Agre proposes to extend Suchman’s work through a historical analysis of the design of tech-

<sup>①</sup> The representation of human activity through software but also through terminology is not least a concern Hannah Neumann discusses in her piece when she discusses the vocabularies that each research community has developed to speak about practice.

nology, here computers, that make such work representable to the computer, and thus accountable to management. As stated by Agre: “[a]lthough many technologies are involved, distributed computing technologies play a crucial role in creating, storing, accumulating, manipulating, and transmitting [...] representations” (1995: 182). In other words, that computers actively, and continuously, shape practices of accountability.

### *Working Interactively*

Agre’s diagnosis leads to both a normative critique and a methodological proposition. The normative critique of technology makes explicit how relations of power and control shape practices of accountability, an aspect that some practice approaches tend to ignore. This critique is guided by Habermas’ (1987: 355-356) definition of “colonization”, through which the “reorganization of communities’ systems of meaning” (Agre 1995: 180) takes place, such that “existing concepts are given technical definitions and thus subordinated to a technological order of knowledge and power” (1995: 180). Agre is therefore concerned with the world-making capacities of technology. More explicitly he takes a medium-specific view to explicate the role of computer technologies in working communities of practice. When Agre talks of communities, he is specifically interested in so-called “occupational communities” (1995: 180), that is, “doctors, mechanics, accountants, secretaries, drivers, and so forth” (1995: 180).

Whilst much of his conceptual understanding of human activity is in spirit with Garfinkel’s theoretical work on practice, in fact, Agre is more interested in developing an “interactionist research methodology” (Agre 1988: 22). Foregrounding “interactionism” (1988: 20), rather than practice per se, or “situated actions” (Suchman 1985), Agre shifts attention to structures and processes of system design. Here, computational representation and human activity are not isolated, but are inextricable, as the “inside” and “outside” of a coherent system. Components of this effort are the computational implementation of a “theory of activity” (Agre 1988: 247; Agre & Chapman 1987), and the development of an “interactionist theory of representation” (Agre 1988: 171). Thus, Agre’s critique of colonization becomes more than just an observation that technologies shape realities.

The methodological proposition considers how colonization requires the development of so-called “grammars of action”, through which certain work practices are “captured”. Agre’s point of departure is the acknowledgement that computers and software run on highly simplified representations of human activities as formalized discrete entities. To represent human activity in a mathematical language a “gram-

mar” is needed as a “stand in” for the computer readable version of human activities. Such grammars are derived from, but not identical to, the pre-existing vernacular language of a community of practice. Agre provides the example of a grammar of restaurant activities which include terms derived from the professional language used by waiters, cooks, and managers including: “orders”, “change”, “items”, “customers”, “tabs” or “tips” (Agre 1995: 183). As they “stand in particular relationships to the activities from which they are derived and upon which they are imposed” (1995: 183), Agre (1994: 109) calls them “grammars of action”. His interest, thus, is the impact of such grammars on work itself and how workers make themselves accountable through these mechanisms.

Grammars and capture processes are in a continuous relationship with one another. Computer systems are designed to capture work processes in a formalized manner and “re-inject” (Agre 1995: 184) a re-formalized, or redesigned, representational schema for workers to interact with machinery or devices, software and interfaces. In so doing, the computational representation, or grammar, overcomes a coding functionality, standing in for or describing an action, and instead “becomes a resource in the activity itself” (1995: 183). For the human aspect upon which capture operates, Agre points out that when the capture mechanism is at work, it never is just a technical system but always also a sociopolitical system. Capture, accordingly, is “never purely technical but always sociotechnical in nature” (Agre 1994: 112).<sup>②</sup> It follows that when the capture process is accompanied by a design process that aims to formalize a pre-existing grammar, then the sociotechnical system and its functioning should be critiqued on the ground of its ideology.

Methodologically, what can we learn from this? Firstly, that grammars of action can be studied in a situated mode, hence, Agre’s interest in ethnomethodology. However, ethnomethodology alone is

② In his contribution Danny Lämmerhirt investigates the German Corona-Datenspende App and finds that the variety and velocity of captured fitness data exceeds the needs of pandemic research. Privacy has a high priority in this case of data exchange, because two powerful institutions are coupled with each other: private business enterprises and government-related organizations. In the process of capture, it is revealed that companies realize user’s privacy rights not by system design but only in a subsequent step of further processing. The donated data can sometimes only be donated in a package with other data that is not requested by the scientific community. The illusion that capture is a technical process is no longer sustainable for private companies. To understand this sociotechnical phenomenon Lämmerhirt approximates these practices with a set of praxeographical tools.

less able to establish a contextual critique of the capture mechanism at work. For instance, in reducing the question of representation to a simple critique of transparency, the wider business discourse on empowerment and measurement is ignored. Contrasting the insights of a critique of transparency with his own analysis, he sees its shortcoming as being ahistorical. Hence, secondly, he develops a technically precise but sociologically informed analysis of the material nature of the empowerment and measurement regime, “plac[ing] the social relations of workplace representation firmly in their historical context” (Agre 1995: 189), such as the professional tradition of engineering, or the alternation of popular management thought. The reason for this historical approach is to analyse and define both the distinct features of the capture mechanism while simultaneously preserving the “complementary orders of ‘technical’ and ‘human’ affairs bound together within a dynamic tension” (1995: 190). We briefly expand on the utility of Agre’s methodological approach by considering two cases: social media APIs, and automotive navigation systems.

#### *Case Study 1: Social Media APIs*

The first example concerns Facebook. Apart from the user facing services, there are also developer facing services on Facebook for Developers, known as the Platform. The Platform provides services to external developers to programmatically interact with Facebook’s data servers for data exchange. The “primary way” (Facebook 2020, n.p.) to use these software products is through the Graph API. The Graph API is a meticulously designed, highly formalized computational representation of grammars directly derived from user activities with and on Facebook. Put otherwise, the Platform can be understood as an infrastructure for the exchange of grammars of action. Examples of the grammars of a photo-like activity within the Graph API include “id”, “gender” and “user\_friends” for the individual actor and “user object”, “created\_time” and “location” for the image or “picture object”, itself. There are a total of more than 100 possible grammars that can be captured for the representation of the activity when someone likes a photo of someone else on Facebook. These grammars are not only contextualized, they are also continuously updated, capturing user activity in real-time and “re-injecting” them into the frontend offering users “new” ways to interact with Facebook, thereby re-establishing previously existing representations to make activity accountable on the platform.

As much as the Graph API is a technological infrastructure, it is equally the documentation of Facebook’s organizational decisions. Placing these representations firmly in their historical context, as

Agre (see, 1995: 189) suggests, we can start analysing the Graph API design within the terms of its political economy. Here the analysis of the “Facebookleaks” documents<sup>3</sup> (Campbell 2018) provides the historic context. The analysis of these documents shows that following an internal estimation of each grammar in terms of its economic benefit, in 2014 the Graph API was redesigned to more efficiently meet Facebook’s business objectives. While the old Graph API pre-existed the economic business model, the new Graph API was explicitly designed to make user and developer activities accountable in economic terms.

#### *Case Study 2: Automotive Navigation Systems*

The second example concerns the “datafication” (van Dijk 2014; Sadowski 2019) of automobility. In this, new interface technologies are being integrated into contemporary vehicles that allow drivers to issue navigational requests. On the one hand, the likes of What3words enable drivers to input locations according to unique, three word strings (such as “cave. wood.grills”) rather than using standard addresses and postcodes. On the other hand, these novel addressing systems are being integrated alongside voice-control systems, meaning drivers no longer have to use unresponsive search boxes, clunky dials or even external sat-navs. Instead, drivers merely issue vocalized instructions. Together, historic places, neighbourhoods or specific street names are replaced with randomized, essentially meaningless, word strings.<sup>4</sup> It is, therefore, a case of what Agre refers to “semantic colonization” (Agre 1995: 186), in which established, arguably community-derived place names are “subordinated to a technological order of knowledge and power” (1995: 180), as mentioned above. Further, that in imposing themselves on the established practices of navigating whilst driving, these technologies also colonize existing driving communities too. In this case, these dual technological developments – of an addressing system and an information retrieval system – combine to offer a contemporary example of how novel representational forms and technologies reshape, and re-organize existing, established navigational activities. Quite plainly, both establish a grammar of acceptable action (three word strings, vocal instructions), that dictates the words or utterances of the driver, making them accountable in a remarkably different manner (no postcodes, no typed searches).

<sup>3</sup> The Facebookleaks documents contain internal communication between Facebook’s top management in which they discuss the major redesign of the Graph API.

<sup>4</sup> The authors wish to thank Aikaterini Mniestri for inspiring us to develop this argument.

## Conclusion

In this short text we have sought to do two things. Firstly, to excavate Agre's work on "interactionism" in order to establish him as a theorist of practice. But, secondly, to suggest that Agre is also peculiar in the way he attends to the question of practice. Here, we have argued that Agre binds together particular technologically-oriented processes that, at the time, were not necessarily considered as part of the same logic. That is, by drawing together "empowerment" and "measurement" within a specific "regime", Agre was able to articulate the role that distributed computer technologies were having on work practices in the 1990s. In intending to "specify the precise role envisioned for computing technology in implementing [this] emerging regime" (Agre 1995: 180), Agre turned to the question of accountability, and the role technologies were having on how work activities were made accountable by workers. Following Habermas (1987), he establishes a critique of such processes of representation, in which pre-existing, "indigenous" work languages are "colonized", with the effect of re-formalizing, or reconstituting related work practices. As a way to build on this critique, Agre makes a methodological proposal, foregrounding interactionism, which he later refers to as critical technical practice (Agre 1997). In providing short cases of how Agre's work can be applied with respect to contemporary digital technologies, such as social media APIs and automotive navigation systems, we believe his work has much more to offer, both conceptually and methodologically, on the subject of practice.

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