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Abstract. During the past decade or so, much HCI research has, according to many researchers, become increasingly phenomenologically oriented. Some have gone so far as to argue that HCI is now in a phenomenological paradigm. But how does such a paradigmatic view work for understanding interaction in the ever growing sphere of social media? Prima facie it may look as it would work only well since social media has become increasingly richer in terms of the sheer range of phenomenologically possible user experiences provided by new and emerging interaction technologies. However, through a critical reading of three major phenomenological works in HCI, we argue that phenomenology as traditionally applied in HCI points indirectly to alternative approaches for engaging in much of contemporary social media research due to its associated semiotic and relationally oriented contents. One possible family of approaches for analyzing such content can be found, as we will argue, in poststructuralist theory. We propose an increased engagement with poststructuralist semiotics grounded in Jacques Derrida's philosophy and exemplify how this could contribute to the study of social media in the context of HCI.

Keywords: HCI Theory, Social Media; Phenomenology; Poststructuralism; Third paradigm.

1 Introduction

Much has been said about the important role that phenomenology has had in HCI over the past 15-20 years, e.g., by Harrison et al. [1], who argue that phenomenology constitutes a new paradigm of HCI. In Harrison et al.'s view, this phenomenological paradigm is a part of a natural evolution from previous paradigms of first human factors and then cognitive science. Further to this, phenomenology as a paradigm introduces new research topics, which suggests new research methods. Harrison et al. view the phenomenological paradigm as centered around understanding and catering for emotions, embodiment, affects, feelings and fun. Although Harrison et al. do not explicitly define phenomenology it is clear what they have in mind in terms of scope: subjective experiences from a broad perspective. The evolutionary narrative told by Harrison et al. resembles that of Rogers [3], where she discusses the evolution of HCI in terms of

three time periods, the classical, modern and contemporary. Phenomenology, according to Rogers, enters HCI in the contemporary period. The notion of phenomenology is left undefined in Rogers as well but the scope of phenomenology is essentially broad and the same as in Harrison et al. Further to this, both authors are especially concerned with and emphasize embodied user experiences. A similar account has also been suggested by Bødker even though she does not explicitly mention phenomenology [4]. All of these authors describe current HCI research as centered around subjective experiences. Given that the scope of phenomenology is subjective experiences as these authors suggest and it is true that HCI has turned paradigmatically to subjective experiences, it makes sense to think that we are in or ought to be in a phenomenological era in HCI methodologically speaking. However, while phenomenology is a strong influence in contemporary HCI and has helped develop our awareness of topics such as context [5, 6], embodiment [7–10], and user experience [11–13], the question that we want to ask in this paper is how far the paradigmatic view of phenomenology holds up in the rapidly growing field of social media research in HCI. In our view, the phenomenological paradigmatic view points, albeit indirectly through its limitations, to how a semiotic analysis might be fruitful to investigate, and we will argue for this position further in sections 5 and 6. We neither aim to refute the phenomenological paradigmatic view nor to prove that HCI researchers in general subscribe to it, we only use it as a starting point for exploring the potentials of using poststructuralism as approach to studying social media in HCI. By poststructuralism, we mean the philosophical tradition that sees language as a primary, constitutive structure underlying all human knowledge, which means that there is no such thing as objective knowledge or unmediated perception: "Experience is never raw, it is always cooked in a figurational code" [14]. Furthermore, poststructuralism argues that words gain their meaning from differential relations to other words, which means that meaning is relational, contingent and unstable. A more in-depth explanation of poststructuralism and its semiotic components is presented in section 6.

2 Phenomenology in HCI Social Media Research

In order to get a better understanding of phenomenology and how it is being used in HCI research on social media, we decided to investigate all papers that were presented at sessions focusing on social media research during the CHI conference 2016. CHI is the most influential conference in HCI and that year CHI offered no less than eight sessions focusing explicitly on social media (Social media and location data; Front stage on social media; Social media engagement; Designing quality in social media; Mental health in technology design and social media; Politics on social media; Affording collective action in social media; Social media and health). In total, 34 papers were presented during these sessions, and we were interested in using these papers as a lens to investigate the use of phenomenology in social media research in HCI. We found that only one of the papers [15] mentioned phenomenology or any of the classical theorists in the phenomenological tradition (e.g., Husserl, Heidegger, Merleau-Ponty, or Schutz). Acknowledging that one does not have to explicitly mention these concepts or names to be performing a phenomenologically influenced research, we engaged in a

careful close-reading of the papers to try and identify more implicit, but still strong, phenomenological themes and approaches. To our surprise, we could only identify a few examples of clear phenomenological influence [15–17]. Some papers discussed topics that are often considered to be part of the phenomenological paradigm in HCI (e.g., experiences [18, 19], emotions [20, 21], and meaning [15, 22]), while others used methodological approaches that Harrison et al. [1] argue are associated with the third paradigm (e.g., ethnography [23, 24]). However, we argue that, in order to identify something as an example of phenomenologically informed research, the research needs to utilize phenomenological theories to a greater extent than merely focusing on a particular theme. Phenomenology is not the only philosophical approach that concerns people's experiences and emotions, nor is it the only approach using ethnography. Categorizing as phenomenology all research focusing on experiences or using ethnography is therefore inadequate.

We can conclude that, while individual researchers might have been influenced by phenomenology, this philosophical tradition does not currently constitute a strong analytical tool in the studies presented in the sessions focusing on social media during CHI2016. In order to see whether this was an isolated occurrence or if we could find the same tendency in papers presented at other venues than the social media sessions at CHI2016, we conducted a new search in which we included papers presented at CHI, DIS, NordiCHI, and TEI. We used the ACM Digital Library search engine and searched for articles mentioning any of the terms phenomenology, phenomenological, Heidegger, Husserl, Merleau-Ponty, and Schutz without any limitations in when the articles where written. The search resulted in 51 articles containing one or more of the search terms. However, none of these articles focused on social media. Thus, the extended search was consonant with our initial findings about the role of phenomenology in HCI social media research.

This discovery made us want to revisit the use of phenomenology in HCI to critically assess whether this theoretical tradition is suitable for research focusing on social media, or if we need other theoretical resources when we engage in such research.

3   Examples of Phenomenology in HCI

Looking at some of the most cited HCI works using phenomenology, many of them primarily draw upon three sources: Husserlian-inspired analyses of individuals' experiences of phenomena, Heideggerian-inspired analyses of being-in-the-world and its relation to social practices, and research on embodied interaction inspired by the work of Merleau-Ponty. In the following sections, we will give three examples of influential works in HCI where phenomenology has been used as theoretical framework. While these three works can obviously not be said to represent all phenomenology works in HCI since phenomenology is a broad field of inquiry with richly varied approaches, we argue that the theoretical resources they utilize demonstrate a tendency among many HCI scholars using phenomenological theory. This tendency is to emphasize phenomenology rooted in subjective experiences rather than social interaction.

3.1 Understanding Computers and Cognition: A New Foundation for Design

In 1986, Winograd and Flores published their influential book in which they used Heideggerian philosophy to critique the dominant cognitive science perspective on human-computer interaction [25]. The authors draw upon Heidegger's idea that our cognitive abilities are grounded in our being-in-the-world, i.e., there is no neutral point from which we can gain access to the world and construct an entirely sober account of an external world. In their view, Heidegger's observations render classical rationalist questions about epistemology nonsensical. For example, how can we know, in a Cartesian sense, that there is an external world? Heidegger's answer would be that we are already thrown into the world and that it is on the basis of this thrownness, our being-in-the-world, that we can come up with rationalistic accounts of the world. Winograd and Flores argue that "our ability to think and to give meaning to language is rooted in our participation in a society and a tradition." [25] This suggests that cognition is always contextual, and the authors thus want to critique the assumed dichotomy between the I (subject) and the surrounding world (object), and the consequential hope that the former will be able to construct neutral representations of the latter. However, while they acknowledge Heidegger's interest in the social character of meaning, they primarily use this to critique naïve accounts of knowledge being something neutral out there that can be captured, i.e., they are primarily interested in the way the social conditions cognition; they are not as interested in the social or relational structures as such.

The work that Heideggerian phenomenology does for Winograd and Flores in *Understanding Computers and Cognition* is to vouchsafe a critique of a rationalistic, cognitive perspective and support a new perspective on rationality based on a radical contextuality of perception and communication. They sought nothing less than a new ground for rationality that was to be as rigorous as the rationalist tradition. At the same time, they sought to understand what it means to be human. By utilizing phenomenology, Winograd and Flores proposes a general holistic perspective on computers, language and thought.

It is interesting to note that, while Winograd and Flores take on strong constructivist stands on mental life and reality, they do not discuss postmodernist or post-structuralist theories. In fact, they made clear that what they were after was not to replace rationalist approaches with more open-ended approaches to human social life such as those inspired by e.g., pragmatism or postmodernism: "We are not interested in a defense of irrationality or a mystic appeal to non-rational intuition. The rationalistic tradition is distinguished by its narrow focus on certain aspects of rationality, which (as we will show throughout the book) often leads to attitudes and activities that are not rational when viewed in a broader perspective. Our commitment is to developing a new ground for rationality—one that is as rigorous as the rationalistic tradition in its aspirations but that does not share the presuppositions behind it." [25] We believe that, had they engaged with a poststructuralist tradition, they would have come to see how they locked themselves into a certain kind of Western bias; a bias that became evident in the software The Coordinator, which they designed and which Winograd discussed in a later article [26]. The Coordinator is depicted as a system that utilizes some of the conclu-

sions about cognition drawn in *Understanding Computers and Cognition*. It never became a success, however. Within the then emerging field of Computer Supported Cooperative Work (CSCW) it became one of the most criticized CSCW systems ever. Most of the critique had to do with how it imposed rigid, political communicative structures on work. Some of the most famous critique came from Lucy Suchman in her 1994 article "Do Categories Have Politics" [27]. She draws upon Michel Foucault to build her argument that what came out of *Understanding Computers and* Cognition in the shape of The Coordinator was a highly politicized system. She argued that, since the system was based on a fixed set of language acts derived ultimately from rigid taxonomies of speech act theory, it had a built-in bias, which limited its scope.

This illustrates one of the limitations of Winograd and Flores' position in relation to phenomenology. While they argue that cognition is conditioned by social contexts, their account lacks a pluralistic understanding of the ideological and political dimensions of that context. According to Winograd and Flores, we should not begin by exploring the world of the user (user experiences) in the design of interaction. Instead, they want to educate people on how to act in the domain of language, and they want to do so through a rational logic that is as rigorous as the rationalistic tradition that phenomenology is often said to critique: "In their day-to-day being, people are generally not aware of what they are doing. They are simply working, speaking, etc., more or less blind to the pervasiveness of the essential dimensions of commitment. Consequently, there exists a domain for education in communicative competence: the fundamental relationships between language and successful action. People's conscious knowledge of their participation in the network of commitment can be reinforced and developed, improving their capacity to act in the domain of language." [25] What Winograd and Flores have in mind is a normative account of how language should be used in human-computer interaction. Moreover, that account effectively bottoms out in a purportedly rigid rational foundation for design built on a taxonomy of speech acts. While Winograd and Flores do discuss phenomenology, the end result of their work is normative speech act theory designed to structure work flows and enlighten users as to what they are doing and how they can use language better. As such, it is far removed from the phenomenological turn that Harrison et al. discuss, which is centered precisely on subjective experiences in a social world beyond inherently normative concerns regarding people's behavior.

3.2   Where the Action is: The Foundations of Embodied Interaction

In 2001, Paul Dourish published his seminal book *Where the action is: The foundations of embodied interaction* [7] wherein much of his analysis concerns tangible interaction and social computing. In Dourish's view, tangible interaction and social computing are aspects of embodied interaction. Further to this, Dourish sees phenomenology as a good way of understanding and grounding embodied interaction theoretically. To do so, he explores four phenomenological thinkers (Husserl, Heidegger, Schutz, and Merleau-Ponty) and argues that there is substantial theoretical resources in the works of these thinkers that can be used for an analysis of embodied interaction. By engaging with these four thinkers, Dourish is able to explore a number of philosophical themes relevant to HCI in relation to a broad perspective on phenomenology. He covers topics such

as intersubjectivity and the social construction of meaning, the awareness that grows out of our experience of being-in-the-world, our perception of technology as phenomenon, and embodied interaction. This results in one of the more substantial explorations of phenomenology in HCI.

However, despite the fact that Dourish connects to several different phenomenologists, his analysis has a strong Heideggerian emphasis. This has consequences for his account of phenomenology and his suggestions about its potential impact for HCI, and can be said to limit his account in two ways. First, as has been pointed out by Svanaes, the book has "surprisingly little focus on the human body" [10] which might seem paradoxical, given the subtitle of the book. According to Svanaes [10], one solution to this is to engage in a deeper conversation with Merleau-Ponty's works, which is what he has tried to do in several pieces [10, 28, 29]. Second, and more important from our perspective, Dourish tends to primarily tap into individualist aspects of phenomenology, which has serious consequences for its utilization as analytical tool to approach social media use. This is evident in his discussions about social computing. As mentioned previously, Dourish argues that tangible interaction and social computing constitute embodied interaction. From this claim, one might expect to see not only a physical analysis in relation to tangible interaction, but also a social and communicative analysis in relation to social computing. However, for Dourish the notion of social computing does not refer to a general use of interactive, social systems, but is more narrowly defined as referring to "the application of sociological understanding to the design of interactive systems" [7]. By positioning social computing so closely to the domain of sociology, Dourish limits the social aspects of computing in a way that is problematic. His engagement with sociological methods may be very useful for performing certain kinds of analyses, but it leaves out the semiotic, linguistic dimensions that typically fund social media use. So, while *Where the action is* contributes with substantial material for exploring human experiences relating to being and doing, it has less to say about communication.

3.3 Interaction Design for and with the Lived Body

As previously mentioned, Dag Svanaes has, in several works [10, 28, 29], used Merleau-Ponty as inspiration for analyzing human-computer interaction, and he argues that HCI has not focused sufficiently on bodily aspects of interaction (see, e.g., his critique of Dourish's book discussed above). In his article "Interaction design for and with the lived body" [10], Svanaes delves further into phenomenology, touching upon the philosophy of Husserl and Heidegger in more depth, and how the latter can be used in the context of HCI. While Heidegger's theories are described as valuable for understanding HCI (e.g., through the well-known tool metaphors), they are also described as suffering from certain weaknesses. For example, Svanaes sees Heidegger's concept of being-in-the-world as being too general to be able to account for our experience of concrete human existence. Merleau-Ponty's emphasis on the lived body is then suggested as a key to how our concrete experience of life can be discovered and more fruitfully explored in HCI.

Svanaes describes a number of examples of how Merleau-Ponty's phenomenology can be used to shed light on interaction. He first offers a fictitious example of someone watching and interacting with an abstract art piece in a gallery. He describes how the user's frame of reference, the phenomenal field, conditions the user's interactions and experiences, creating a directedness towards the art piece [10]. The interaction taking place and the experiences that emerge through this interaction, are described as something that occurs between the user and the art piece. One could, of course, argue that the phenomenal field cannot be sensibly de-coupled from a historical, cultural, and social context that extends the interactive network beyond the human-art relationship. However, emphasis is on how the user perceives the interaction through bodily perception, an individualist perspective on interaction.

He then continues to describe several other examples of how phenomenology can inform our understanding of embodied interaction. Most of these examples describe one individual's interaction with an artifact, e.g., a person reading and turning pages, a person scrolling text on a screen, and a physician interacting with paper medical records. Focus is on the individual's interaction with technology even though there are implicit communicative ingredients in these cases. For example, Svanaes describes how a model of design-through-enactment is used in a workshop to shed light upon the conditions for interaction in a hospital environment. In his account of the workshop, Svanaes describes how the participants interact and communicate within the frames of the defined scenario. However, there is no emphasis on the actual communication as such. What is in focus is the embodied interaction, not the communication that might occur in relation to this.

So, Svanaes' text primarily describes Merleau-Ponty's phenomenology as valuable for informing our understanding of embodied interaction in relation to an artifact, which we argue limits its use in research on communicative actions, such as what we focus on in social media research. Furthermore, even though embodied interaction has a communicative dimension in the way that physicality situates interaction in a spatial context with both human and technological interrelations, the strong focus on the physical body makes this model inadequate to use as a theoretical framework for analyzing interaction in social media.

While Svanaes' account of phenomenology, in our view, illustrates the limitations of this tradition when it comes to its potentials as theoretical framework in HCI social media research, there is, however, a vital point in Svanaes' paper that can contribute strongly to social media research. In a section called "Perception is active", Svanaes contrasts Merleau-Ponty and the cognitive tradition in HCI. He argues that the cognitive tradition represented by Card et al. [30] is primarily interested in the passive perception of sense data. In contrast, Svanaes argues that, to Merleau-Ponty, "there is no perception without action" [10]. Even though Svanaes does not mention it, this also constitutes a critique of the Cartesian tendencies of early Husserlian phenomenology. By introducing an activity perspective into what sometimes risks becoming a philosophy of passive perception, Svanaes here contributes with one component that we consider vital to research on social media use. We will return to this aspect in our section on Derridean philosophy.

4 The Individualist Character of the Phenomenological Approach in HCI

As illustrated in this overview, phenomenology has contributed substantially to the study of people's experiences of and with technology. However, in this section we will discuss some fundamental aspects of the phenomenology used in HCI that suggest that this tradition is of limited use as theoretical framework when studying social media.

Much of the phenomenology that has been used in HCI emphasizes the experience of individual people. Different as the analyses made by Winograd & Flores, Dourish, and Svanaes might be, they primarily focus on the individual human being, which, to some extent, is well motivated by the phenomenological tradition itself. Originating in Husserl's analyses of the individual's experience of an object, phenomenology is characterized by a strong emphasis on the individual. This has also been acknowledge by Dourish: "Husserl and Heidegger had developed phenomenology in different directions, but they had nonetheless both concentrated on the individual experience of the world." [7]. While Dourish has a valid point, it is also important to acknowledge that, in fact, Heidegger seriously criticized Husserl for providing a philosophy that was too Cartesian in its focus on the experience of the individual. By formulating what can be called a practice-oriented or culture-oriented approach, emphasizing the cultural situatedness of knowledge and experience, Heidegger tried to present an alternative. His famous image of the carpenter whose engagement with a hammer is informed by contextual structures is an attempt to break free from the isolationist character of Husserlian phenomenology. However, this attempt to broaden the scope of phenomenology has hardly been acknowledged within HCI, where much of the work tapping into the phenomenological tradition refers to Heidegger, but in fact, uses a Husserlian phenomenology rather than a Heideggerian one. For Dourish, one possible answer to this isolationist challenge can be found in the texts of another phenomenological thinker: Alfred Schutz. Dourish continues: "The critical contribution of Alfred Schutz (1899-1959) was to extend phenomenology beyond the individual to encompass the social world." [7]. To Schutz, the question of how to relate one's individual experience of the world to that of other people's experience was central. He argued that the connection of one individual's meaningful experience to that of another individual, i.e., intersubjectivity, is a result of social actions. Intersubjectivity is something we do, not something that is. This emphasis on social doing offers interesting opportunities for a domain like HCI, where there is a strong interest in engagement with socio-technological systems. Even though references to Schutz's philosophy are rare in HCI research, his thinking has influenced HCI through, e.g., the work of Garfinkel and the frequent use of ethnomethodology [31, 32].

So, would an increased engagement with Schutz's philosophy offer tools that can be used to develop a more solid theoretical, analytical approach for research on social media use? We suggest that, while Schutz's philosophy offers interesting perspectives on how people act in and create their social world, there are two reasons for looking outside of phenomenology for a theoretical framework to study social media. First, social media is characterized by a fundamentally relational logic. Whether we are studying Twit-

ter, Instagram, Facebook, or some other platform, we encounter configurations and re-configurations of connections and relations. The practices of commenting, critiquing, supporting, and forwarding, illustrates that "no post is an island", to paraphrase John Donne [33]. The fundamental logic of social media is to situate a communicative activity in a web of interpretations and other communicative activities. If we want to study such a relational technology and the practices within it, a theoretical framework that assumes relationality to be the *sine qua non* of the studied phenomenon should be a good starting point. The second reason is that this relational logic is rooted in semiotics. If we were to reduce social media to its core, we can say that it consists of sign-processes. Text messages, videos, images, and games are signs, and engaging with them means that we engage in semiotic processes. If we are to study these semiotic processes, it seems reasonable to suggest that a theoretical framework grounded in semiotics and/or linguistics should be able to contribute to our understanding of these technologies and practices. We acknowledge that there is an important role to play for a phenomenological research using perception as a core analytical lens in studying social media interaction. However, as will be argued below, a research that builds on semiotics as a core analytical lens will approach this field in a different way, and might reveal aspects of interaction that are not made visible through a phenomenological lens. Therefore, we suggest that an increased engagement with semiotic theories might contribute to a deeper understanding of social media interaction. While semiotics has been part of the HCI domain for a long time [5, 34–38], its utilization has often marginalized hermeneutic aspects that are core to social media engagement such as communication, negotiation of meaning, and sense-marking, instead focusing on instrumental aspects of interaction: "its use is often oriented toward engineering goals, such as specifications of needs and requirements, rather than criticism, interpretation, or judgment" [36].

In the following sections, we present a poststructuralist framework for analyzing semiotic/linguistic action from a critical perspective of the general sort we have in mind for interpreting communicative actions in social media use. Our main point with presenting this framework is not to suggest that it constitutes a complete research framework, but merely to illustrate the general direction of research that we have in mind.

5 Poststructuralism in HCI

Poststructuralist/postmodernist approaches (we will refer to them both here as poststructuralist approaches), pioneered in HCI by Sherry Turkle and others, had an upswing in the analysis of virtual reality, online communities and the proto-social social media of the 1990s and early 2000s [39–41]. This research was often innovative and largely radical to the point of (in some instances) being somewhat unrealistic [42]. Many authors of this early turn to poststructuralism in HCI and related fields (e.g., analysis of online communities and social life in virtual reality) sought to reveal to us entirely new digital social worlds with new rules of social interaction far beyond normal established conventions. Researchers often emphasized the linguistic foundations of social reality and suggested that digital technology could constitute a space in which humans were free to construct themselves without the limitations of the physical body:

"What I am saying is that the many manifestations of multiplicity in our culture, including the adoption of multiple on-line personae, are contributing to a general reconsideration of traditional, unitary notions of identity. On-line experiences with 'parallel lives' are part of the cultural context that supports new theorizations about multiple selves." [43]

However, after a brief period of interest, this version of poststructuralism lost popularity in HCI for a number of reasons [6, 42]. Technologically, the early poststructuralist research focused on particular text-based online worlds (e.g., MUDs), which lent themselves well to a poststructuralist text analysis. However, given the radical technological development over the past two decades, during which offline and online have become increasingly entangled, the early poststructuralists' conclusions drawn from observations made in demarcated, sub-cultural online worlds is of limited relevance. Another reason why poststructuralism lost relevance was that the initial studies focused on young, white, university students, which was a group to which many users in the MUD context belonged. Twenty years later, digital technology is being used by a much more diverse and heterogeneous demographic, and it is not obvious that the behavior of a homogeneous user group like the one Turkle studied can automatically be translated into the heterogeneous users of today.

Since this first wave of poststructuralism in HCI, other researchers have presented work influenced by poststructuralist theories. This research has contributed substantially to our understanding of topics such as gender [44, 45], identity [46], ambiguity [47, 48], and design criticism [49, 50]. Acknowledging a theoretical continuity to these initiatives, we think that an increased engagement with poststructuralism could help stimulate the development of a research approach that is more suitable for the contemporary context of social media than the first wave of poststructuralist research in HCI.

6 Returning to the Semiotic Foundations of Poststructuralism

How can we understand our interactive contemporary social media world through poststructuralist analysis? Our proposed approach begins with a return to semiotic theory. One of the most influential thinkers proposing a critical, semiotic/linguistic model of analysis is Jacques Derrida. One of the reasons why we suggest that Derrida can be used to complement the phenomenological influence in HCI, is that he has not only formulated a critique of phenomenology's individualistic focus, but also suggested how to move beyond the limitations of this tradition through a deep engagement with semiotic/linguistic philosophy.

In his book *Speech and phenomena and other essays on Husserl's theory of signs* [51], Jacques Derrida provides a number of arguments with which he criticizes Husserl's phenomenology. Derrida argues that Husserl's interpretation of meaning is based on an essentialist assumption of meaning as something present in the sign. According to Derrida, Husserl assumes that one can experience the meaning of a sign unmediated. Against this, Derrida argues that meaning is always mediated, and that therefore, there is no stable meaning of a sign. In this and other works [e.g., 21], Derrida eventually

establishes two concepts that contrast against the phenomenological tradition, and that we suggest can be used for an analysis of social media use: différance and supplement.

Différance is a term that Derrida formulated to describe how meaning emerges through a differential play between semiotic signs. The concept suggests an ambiguity in the construction of semiotic meaning. The word différance entails both a spatial dimension (differ) and a temporal dimension (defer) [51, 52]. The spatial dimension indicates that a sign receives its meaning through its difference from other signs, a thought drawing on the linguistic theories of Ferdinand de Saussure. The temporal dimension adds a chronological aspect to this differential play of signs, suggesting that a sign does not only receive meaning through its difference from other signs existing simultaneously in the linguistic structure, but also through the difference from signs that have existed before in the structure as well as signs that will appear later. This suggests that the meaning of a sign is never a stable, present quality. Instead, meaning is an emergent quality that grows out of a differential process where the sign is constantly awaiting a new meaning from future reconfigurations and repositionings within the linguistic structure. To Derrida, différance constitutes a definite end to the idea of an unmediated meaning, and he argues that meaning is always mediated through these processes of differentiation. Différance thus challenges some of the core assumptions of Husserlian phenomenology and its interpretation of the ability of individual humans to perceive phenomena in an unmediated way. Différance points to an absence that constantly haunts the assumptions of meaning and identity, thereby eroding the stability of an assumed referential character of language.

Another core concept that functions in relation to the deferring dynamic of différance is the supplement. Since, according to Derrida, meaning is temporally deferred, all signs are, in a sense, incomplete. They are in need of completion, supplementation. Derrida criticizes Rousseau's suggestion that a supplement is added on to something essential, and instead argues that the supplement in itself is a clear indication that the original is never essential [53]. That which is complete cannot be added to. Thus, the supplementary character of the sign indicates that each sign is incomplete and in need of some sort of hermeneutic action by which it can reach completion. This constitutes a forward-striving movement in Derrida's philosophy. A sign is not something that carries a particular, set meaning, but something that needs to be supplemented in order to gain meaning. This means that we as humans are engaged in a supplementary play through which we attempt to complete the incomplete and to fill an original lack. This play is, however, futile. Since each sign is a signifier of a signifier rather than a signifier of a signified, the chain of signification is a never-ending process of supplementary hermeneutic acts. Thus, the hermeneutic process of communication is motivated by the deferral nature of semiotic systems. Since meaning is not present in a sign, meaning is, in a sense, left hanging mid-air. Each sign thus functions as an invitation to perform a supplementary action. So, the idea of the supplement suggests that we are engaged in a continuous, ongoing hermeneutic process of semiotic activity. The communicative act is not a process through which a clearly defined piece of information is transferred from a writer to a reader, but a search for completion; a completion that will never succeed. To conclude, when we combine Derrida's notions of différance and supplement, all communicative actions appear, not as expressions of pre-existing meanings, but as

complementary parts of differential processes through which meanings emerge. The reason for interaction is thus not to propagate or disseminate an existing bit of information, but to complete a gap by constructing this very information as a sign that is different from other signs in the communicative chain. This attempt is, however, destined to fail, since all meaning is contingent. The communicative act can never establish semiotic closure, but only propose a temporary stability, which functions as an invitation for further supplementary acts through which this stability is once more challenged. And so the communicative process continues, without a clear beginning or a clear end.

7   Consequences for HCI

Poststructuralism can contribute to developing hitherto underdeveloped areas in HCI. Just like the influences from phenomenology have helped develop a sensibility for user experience, emotions, embodiment, and the situatedness of technology, poststructuralism can contribute to developing other perspectives that can inform our understanding of human-computer interaction. Below, we will discuss three themes that are core to poststructuralist theory and that can have interesting implications for HCI.

7.1   All Interaction has a Semiotic Dimension

First, according to Derrida, the world in which we live is a world of signs. Whether we interact with things that we usually think of as carrying semiotic meaning (e.g., websites, social media posts, texts, icons, road signs, books etc.) or objects that we usually do not think of as semiotic (e.g., a tree, a technological artifact, or a piece of furniture), their function to us is semiotic; they function as signifiers. They carry meaning in the sense that we have socially and culturally constructed ideas of what roles they play in our lives and our society. But they also have a constructed identity in the sense that we have a notion of what they mean to us (to me as individual, to my family, to my professional role, in the ideological, religious, or political narrative to which I see myself belonging). These layers of meaning are like an onion; we can peel off layer after layer without ever finding a true core; until the object disappears. We can never reach beyond the signifier to an objective signified. This means that at a foundational level, when we engage with our surrounding world, we also engage with semiotic signs. By interacting, we position and reposition ourselves in relation to different semiotic resources. So, as we engage in this play of signs, we negotiate our own place in this web of significance, which shifts focus from the instrumental view of interaction as task-oriented and problem-solving to a view of interaction as an existential practice. An HCI analysis building on such semiotic analyses would focus on how our interaction with interactive systems constructs our lives, rather than how they function as instrumental objects or how they make us feel. In this view, interaction becomes an existential practice.

7.2   A Broadened Understanding of Context

Second, an HCI drawing on Derridean ideas would suggest that we revisit and broaden the notion of context. Human beings as well as technological artifacts are unavoidably entangled in different kinds of relations: social, personal, professional, cultural, ideological, economic, political, etc. There is no such thing as an autonomous user interacting with an artifact in an entirely demarcated way. There are always threads criss-crossing the terrain of interaction. The notion of context is, of course, a key notion in HCI, and has been so for a long time. However, context has often been treated as epiphenomenal to the user's interaction with technology [54]. Context is often understood as something that is added onto an already existing interactive intention. However, context needs to be understood not as interference, but as conditional to all interactions. When we engage in interaction, this interaction is conditioned by relational structures (as indicated previously), e.g, social, physical, temporal, cultural, ideological, economic, and political structures. Furthermore, just like Derrida's différance is a concept with both spatial and temporal aspects, so is context. In HCI, we have been rather good at identifying and analyzing certain aspects of spatial context. Looking at the place in which interaction happens has been central to HCI research since at least Lucy Suchman's work in the 1980s [54]. However, spatial context is more than physical location. Spatial context may also involve, e.g., cultural, ideological, religious, or political spaces. Dourish has made the distinction between space, which is a physical context, and place, which "refers to the way that social understandings convey an appropriate behavioral framing for an environment" [7]. While Dourish's account has merits in that it acknowledges context as something that goes beyond the physical, it still limits the understanding of context by relating it to defined groups with shared interests and experiences. According to Dourish, place is "knowledge that is shared by a particular set of people based on their common experiences over time" [7], which reduces place to a local social constellation. From a Derridean perspective, context needs to be broadened beyond social practices and shared views.

Let us imagine for example that we have heard of a YouTube clip in which a politician presents political opinions that are far from our own and that we perhaps even consider inappropriate. We want to see the clip for ourselves to learn more about the political forces that we do not like to see influencing society. We first go to the YouTube search field to search for the video. As we enter the name of the politician, we activate algorithms that will have an effect not only on our own future search results, but also on the future search results of everyone else in the sense that this politician and related messages will be placed higher on the list of search results. We might also discover how this politician, or political messages of the same kind, start appearing as ads in our social media flow or when we read the news on a newspaper website. Then we view the clip, and just by doing so (we do not even have to interact by liking the video or sharing it), we contribute to shifting the order of the YouTube ranking so that this clip is placed higher on the ranking lists. That way, we actually help making this clip more visible, which means that we contribute to disseminating political messages that we do not agree with. Let us also imagine that we are teachers, and that, some time after having viewed the clip, we want to show our students something on YouTube. As we

project YouTube on to the big screen in the classroom, we find that, in the recommended video field, the politician whose clip we watched and absolutely do not want to be associated with, appears, displaying to all the students a political message that we do not support and a potential political affiliation that is inconsistent with our personal conviction.

Thus, by viewing a simple video clip, we become agents in political and ideological processes that go far beyond our initial intention for interacting with this technology. These ideological processes and structures constitute an extended contextual condition, which a Derridean analysis would help us recognize through its emphasis on semiotic systems that are characterized by both spatial difference and temporal deferment. Furthermore, as we engage in interaction, we are also conditioned by temporal contexts. We carry with us memories of previous experiences and theoretical frames that condition the interaction. However, the temporal context is also forward-looking which relates to the supplementary dynamics of interaction. We carry with us hopes and fears about the future, and we might, for example, view the YouTube clip with the intention of understanding the future with which our children will have to struggle. The hope and fears about this future may influence both the way we experience our interaction (a poststructuralist perspective does not reject an analysis of experience, but tries to broaden it) and the way we actually perform or enact it. So, a broadened understanding of context and its conditioning role in interaction is one consequence of Derridean theory.

7.3   Conflict as a Creative Source of Identity

This brings us to the third theme: conflict as a characteristic of semiotic activity. As we have seen, according to a Derridean analysis, meaning is dependent upon difference, and the way differential meaning emerges is through an ongoing play of signs. Supplementary interaction is not based on a logic related to identity but on a differential logic. What creates meaning and identity is how we relate differentially to others. It is by positioning ourselves in relation to something else that our identity emerges. Thus, identity is not original, but is a product of processes of differentiation. This means that conflict is not necessarily a negative thing to be avoided. Instead, given that meaning occurs through differential relations, conflict is a hermeneutic condition in which meaning is established (albeit contingently) through processes of differentiation. Conflict is a necessary and creative component in negotiating meaning: without conflict no meaning. Translated into the context of social media, this indicates a different reason for the conflictual nature of much online communication than what is sometimes proposed. Instead of interpreting conflicts between humans in online environments as clashes of already formulated opinions, or as consequences of bad manners or the protecting shield of anonymity, we could interpret them as components in a larger process of constructing meaning. It would suggest that communication in social media has less to do with promoting one's own opinion than with relating differentially to the opinions of others. Through this play of positioning differentially in relation to others, meaning emerges.

Taking into consideration semiotics, context, and conflict in interaction as outlined above could help us better understand social media interaction as an arena of contemporary social reality.

8   Conclusions

Our aim in this paper has been to explore whether phenomenology is a suitable theoretical approach to use in social media research in HCI. We have argued that phenomenology as traditionally practiced in HCI lacks certain functional features relevant for analysis of social communication and that a framework based on linguistics and semiotics such as poststructuralism would be more suitable for understanding social media use. However, we want to emphasize that what we seek is not "the right" way of working with questions of social media use in HCI. We do not think there is one right approach, but we do think that there could be alternative approaches that could work better in many semiotically rich environments than what the phenomenology currently practiced in HCI can. As pointed out by our reviewers, in this paper we have neither examined work in social media nor STS research outside of the scope of core HCI research venues. To be sure there is much to be learned from these two areas of research on how to deploy semiotic analysis in relation to media. Here we offer our alternative of semiotic analysis, based on our own knowledge and understanding of HCI and poststructuralist theory. We hope that others will find it useful. Further to this, we hope that for those who do not agree with us, that such disagreement will spur much needed discussion of social media and semiotic analysis in HCI. In this light, our paper here is a call for action as much as it is a proposed solution. For our own part, we plan to further explore the role of phenomenology and poststructuralism in social media research by performing a comparative review of research papers (not limited to core HCI venues) that draw upon phenomenology and poststructuralism respectively. We want to identify the philosophical resources used in these studies, and what consequences they have for the design and outcome of the research. Through such a comparative review, we want to investigate what practical consequences the choice between phenomenological and poststructuralist approaches might have in social media research and what this could analogously mean for HCI research.

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