This is the author's accepted manuscript of a book chapter that has been published in Michael Filimowicz and Veronika Tzankova (Eds.), *New Directions in Third Wave Human-Computer Interaction: Volume 1 – Technologies* (pp. 11-24). Springer, 2018. Please do not circulate.

The Relational Turn: Third Wave HCI and Phenomenology

David J. Gunkel – Northern Illinois University (USA)

Abstract

Third wave HCI proposes an innovative method for framing human computer interactions by putting emphasis on the terms and conditions of the interactive relationship prior to determinations concerning the human subject and its computational object. As promising as this "relational turn" appears to be, there are important theoretical, epistemological, and axiological challenges that remain and need to be addressed. This chapter takes up and investigates a number of these open questions regarding third wave HCI. It begins by briefly reconsidering the three waves or paradigms of HCI research and demonstrating how what appears last in the numbered sequence, the third wave, is actually older and "more original" than it initially appears to be. It then examines the opportunities and challenges of the phenomenological commitment that is operationalized in third wave HCI. And it concludes by identify and outline the consequences of this innovation for current and future research efforts.

Standard methods for conducting HCI (Human Computer Interaction) research, typically assume and operationalize a subject/object dichotomy. Formulated in this way, the characteristics and features of interaction are considered to be a subsequent result of the two interacting components: the human subject and the computational object. Third wave HCI proposes to flip the script on this transaction, putting emphasis on the interaction before and in advance of determinations concerning the subject and object of the relationship. As promising as this change in perspective might sound for altering the way we address and investigate human/machine interactions, there remains important theoretical, epistemological, and axiological challenges to this modification that need to be addressed and formalized.

The task of the following is pursue these open questions in an effort to account for the full potential and consequences of third wave HCI. This objective will be pursued by capitalizing on innovations already available in other fields, especially the phenomenological tradition in continental philosophy and recent developments in moral epistemology, which have already gone through and experienced a similar "relational turn" (Coeckelbergh 2012 and Gunkel 2012). Toward this end, the analysis that follows will proceed by way of three steps or movements. The first will briefly reconsider the three waves or paradigms of HCI research and demonstrate how what appears last in the numbered sequence, the third wave, is actually older and "more original" than it initially appears to be. The second section, will then examine the opportunities and challenges of the phenomenological commitment that is operationalized in third wave HCI. And the third and final section will identify and outline the consequences of this innovation for current and future research.

1. Paradigms of HCI Research

Scholars currently recognize three intellectual waves of HCI research. Steve Harrison, Phoebe Sengers and Deborah Tatar (2007), following the influential work of Thomas Kuhn (1996), have characterized these as three unique paradigms. "Central to each paradigm in HCI," they argue, "is a different metaphor of interaction. Each such metaphor introduces 'centers' and 'margins' that drive choices about what methods are appropriate for studying and designing interaction and for how knowledge claims about interaction can be validated" (Harrison, Sengers and Tatar 2007, 4). This adaptation of Kuhn's theory (and it is an adaptation insofar as Kuhn's text does not utilize the terms "center" and "margin") is then utilized to identify and explicate three different and competing approaches to the study of HCI.

1.1 Three Waves

First wave HCI, which consists of "an amalgam of engineering and human factors, saw interaction as a form of man-machine [SIC] coupling in ways inspired by industrial engineering and ergonomics. The goal of work in this paradigm, then, is to optimize the fit between humans and machines; the questions to be answered focus on identifying problems in coupling and developing pragmatic solutions to them" (Harrison, Sengers and Tatar 2007, 4). First wave HCI, therefore, is about human control of computational mechanisms and is concerned with the best way to design input and output affordances to facilitate effective human/machine couplings. Although Harrison, Sengers and Tatar do not state it explicitly, this paradigm is informed by first wave cybernetics, where the controlling issue was control (Wiener 1996).

The second paradigm of HCI research, shifts focus from questions of efficient control and ergonomics to computational capability and information processing and transmittal. The second wave, as Harrison, Sengers and Tatar (2007, 4) explain, "is organized around a central metaphor of mind and computer as symmetric, coupled information processors. At the center is a set of information processing phenomena or issues in computers and users such as 'how does information get in', 'what transformations does it undergo', 'how does it go out again,' 'how can it be communicated efficiently' etc." This second intellectual wave of HCI research focuses attention not on matters of control but on the flow of information into and out of the device and the transformations in data that occur by way of this process. It is, therefore, concerned with "communication" as characterized by Claude Shannon and Warren Weaver (1963) in *The Mathematical Theory of Communication*, namely, how information gets into the device, how it is processed, and how the output is generated and conveyed to the human user by way of various interface applications and features.

Third wave HCI introduces another alteration in focus or what Harrison, Sengers and Tatar describe as a movement to the center of items that had been (in terms of the two previous paradigms) considered marginal. "We are now in a position to define the 3rd paradigm more precisely. It contains a variety of perspectives and approaches whose central metaphor is interaction as phenomenologically situated. The goal for interaction is to support situated action in the world, and the questions that arise revolve around how to complement formalized, computational representations and actions with the rich, complex, and messy situations at hand around them" (Harrison, Sengers and Tatar 2007, 9). This significant shift in perspective can be characterized as a kind of inversion of the other two paradigms insofar as it is concerned not with the capabilities or operations of the two interacting components—the human user and the computational artifact—but with the phenomenon of the relationship that is situated between them. Third wave HCI, therefore, emphasizes the terms, conditions, and situation of the interaction and not (at least not primarily) the subject and object of the relationship. In this way, "relations are prior to the things related" (Callicott 1989, 110), instituting what other theorists have called a "relational turn" (Coeckelbergh 2012, 49).

1.2 Third Wave Avant La Lettre

From a third wave perspective, HCI research is framed in such a way that the central matter of concern is the situation and characteristics of the interaction and not the ontological capabilities or features of the two elements that comprise (or are presumed to comprise) the terms of the relationship. Although this shift in focus is presented as a more recent innovation in

the lineage and evolution of HCI research (it is the third item in a sequence of intellectual developments or waves), it is a viewpoint that is already available and operationalized in Alan Turing's agenda-setting paper on artificial intelligence. Or to put it another way, the Turing Test, or what Turing himself calls the "game of imitation," is third wave HCI *avant la lettre*.

Although Turing begins this essay by proposing to consider the question "Can machines think?" he immediately recognizes persistent and seemingly irresolvable terminological difficulties with the question itself. "I propose," Turing (1999, 37) writes, "to consider the question, 'Can machines think?' This should begin with definitions of the meaning of the terms 'machine' and 'think.' The definitions might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous. If the meaning of the words 'machine' and 'think' are to be found by examining how they are commonly used it is difficult to escape the conclusion that the meaning and the answer to the question, 'Can machines think?' is to be sought in a statistical survey such as a Gallup poll. But this is absurd." In response to this difficulty—a semantic problem with the very words that would be employed to articulate the question to begin with—Turing proposes to pursue an alternative line of inquiry: "Instead of attempting such a definition," Turing (1999, 37) continues, "I shall replace the question by another, which is closely related to it and is expressed in relatively unambiguous words. The new form of the problem can be described in terms of a game which we call the 'imitation game.' It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman." This determination, as Turing explains, is to be made by way of a sequence of questions and answers. The interrogator (C) asks participants A and B various things, and based on their responses tries to discern whether the respondent is a man or a woman. "In order that tone of voice may not help the interrogator," Turing (1999, 37-38) further stipulates, "the answers should be written, or better still, typewritten. The ideal arrangement is to have a teleprinter communicating between the two rooms."

In this way, the initial arrangement of the "game of imitation" is, as Turing describes it, predicated on a kind of computer-mediated communication (CMC). The interrogator interacts with two unknown participants via a form of synchronous computer-mediated interaction that we now routinely call "chat." Because the exchange takes place via text messages routed through the instrumentality of a machine, the interrogator cannot see or otherwise perceive the identity of the two interlocutors and must, therefore, ascertain gender based on responses that are supplied to questions like "Will X please tell me the length of his/her hair" (Turing 1999, 37).

Consequently, the identity of the interlocutors is something that is hidden from view and only able to be ascertained by way of the messages that come to be exchanged.

Turing then takes his thought experiment one step further. "We can now ask the question, 'What will happen when a machine takes the part of A in this game?' Will the interrogator decide wrongly as often when the game is played like this as he does when the game is played between a man and a woman? These questions replace our original, 'Can machines think?'" (Turing 1999, 38). In other words, if the man (A) in the game of imitation is replaced with a computing machine, would this device be able to respond to questions and "pass" as another person, effectively fooling the interrogator into thinking that it was just another human interlocutor? It is this question, according to Turing, that replaces the initial and unfortunately ambiguous inquiry "Can machines think?" Consequently, if a computer does in fact becomes capable of successfully simulating a human being, of either gender, in communicative exchange with a human interrogator to such an extent that the interrogator cannot tell whether s/he is interacting with a machine or another human individual, then that machine would, Turing concludes, need to be considered "intelligent."

For Turing's game of imitation, what is of principal importance is what actually transpires in the communicative interaction. The test, therefore, is not an evaluation of the internal capabilities of the interactants per se but of the communicative behavior evidenced in and by the interaction, and human-grade interpersonal conversational interaction in particular. Furthermore, the game of imitation is not really concerned with what kind of information is provided by the interlocutors but with whether the performance of the conversational interaction was believable or not as judged by a human interrogator.

2. Phenomenology

What distinguishes third wave HCI, therefore, is an epistemological shift from efforts to determine "what something is" to "how it appears to be." This is precisely why third wave HCI can be described as *phenomenological*. The concept of phenomenology develops from an important epistemological pivot in modern philosophy. Beginning with Immanuel Kant's *Critique of Pure Reason* (at least with this work, but there are ways that this entire tradition can and has been be traced all the way back to Plato, if not beyond), there is recognition that what something is in-itself needs to be distinguished from how it appears to us, finite human beings, by way of interactions with our senses. Phenomenology, as Peter-Paul Verbeek (2011, 15) explains, names "a philosophical movement that seeks to analyze *the relations between human beings and their world* rather than as a *method* for describing reality." Although different brands

of phenomenological thinking (e.g. Hegel, Husserl, Heidegger, Merleau-Ponty, etc.) approach this effort in significantly different ways, the basic structure remains in play—namely, the apparent separation between the knowing subject and the object of knowledge and the need to account for (if not remediate) this seemingly irreducible difference. And despite the fact that the vocabulary is different, this is precisely what Turing had focused on: how different objects (either another human individual or a computer) appear to function in conversational interactions with a human subject, irrespective of what they actually are, which is, according to the stipulations of the game of imitation, always and already hidden from direct view.

2.1 Epistemological Complications

There is one important epistemological complication with this procedure, and that complication is already evident in Turing's parlor game. The Turing test derives a determination of intelligence from the simulation of behavior. It therefore makes a decision concerning *what is* from *how it appears to be*. This is precisely what is targeted and critiqued by the philosopher John Searle in his Chinese Room thought experiment.

> Imagine a native English speaker who knows no Chinese locked in a room full of boxes of Chinese symbols (a data base) together with a book of instructions for manipulating the symbols (the program). Imagine that people outside the room send in other Chinese symbols which, unknown to the person in the room, are questions in Chinese (the input). And imagine that by following the instructions in the program the man in the room is able to pass out Chinese symbols which are correct answers to the questions (the output). The program enables the person in the room to pass the Turing Test for understanding Chinese but he does not understand a word of Chinese (Searle 1999, 115).

The point of Searle's imaginative albeit somewhat ethnocentric illustration ("ethnocentric" insofar as Chinese has always constituted the "other" of European philosophy since at least the time of Leibniz) is quite simple—simulation is not the real thing. "The Turing test," as Searle (1999, 115) concludes, "fails to distinguish real mental capacities from simulations of those capacities. Simulation is not duplication." In other words, merely shifting verbal symbols around in a way that looks like linguistic understanding is not really an understanding of the language. A computer, as Terry Winograd (1990, 187) explains, does not really understand the linguistic tokens it processes; it merely "manipulates symbols without respect to their interpretation." Or,

as Searle (1984, 34) characterizes it, computers have syntax, a method of symbol manipulation, but they do not have semantics.

The important question is whether this kind of simulation is a useful social fiction, i.e. a kind of "game" that has its utility (as it does for Turing), or whether it is an inherently deceptive practice that should be tightly controlled, if not actively constrained? In response to this question, there have been two kinds of answers. For Sherry Turkle, this pretense is a significant problem: "I find people willing to seriously consider robots not only as pets but as potential friends, confidants, and even romantic partners. We don't seem to care what their artificial intelligences 'know' or 'understand' of the human moments we might 'share' with them…The performance of connection seems connection enough" (Turkle 2011, 9). According to Turkle's diagnosis, users of emerging technology are in danger of substituting the technological interface for the genuine face-to-face encounters we used to have with other human beings. "Technology," she explains, "is seductive when what it offers meets our human vulnerabilities. And as it turns out, we are very vulnerable indeed. We are lonely but fearful of intimacy. Digital connections and the sociable robot may offer the illusion of companionship without the demands of friendship" (Turkle 2011, 1).

In an effort to restrict or at least protect users from this apparently dangerous form of deception, the "Principles of Robotics" (Boden et al. 2017, 127) stipulates the need for transparency. "Robots are manufactured artefacts. They should not be designed in a deceptive way to exploit vulnerable users; instead their machine nature should be transparent." In stating this, the authors of the principles are not dogmatic absolutists. They recognize that there may be instances where the appearance of intelligence is part of the game. But they are clear in their specification that users always, and from the very beginning, have a right to know that this is a game: "Although it is permissible and even sometimes desirable for a robot to sometimes give the impression of real intelligence, anyone who owns or interacts with a robot should be able to find out what it really is and perhaps what it was really manufactured to do" (Boden et al. 2017, 127). What the authors of the principles find objectionable is not simulation (or "deception," which has negative overtones and denotations) per se but unacknowledged simulation, where the user does not explicitly consent to playing the game.

At the other end of the spectrum, there are other voices, like those of Kate Darling and Tony Prescott, who argue that this proclivity is not necessarily a dangerous ruse that needs to be avoided at all costs but the very condition for possibility of social interaction. "Looking at state of the art technology," Darling (2012, 1) points out, "our robots are nowhere close to the intelligence and complexity of humans or animals, nor will they reach this stage in the near

future. And yet, while it seems far-fetched for a robot's legal status to differ from that of a toaster, there is already a notable difference in how we interact with certain types of robotic objects." This happens, Darling continues, principally due to our tendencies to anthropomorphize things by projecting into them cognitive capabilities, emotions, and motivations that do not necessarily exist. Socially interactive robots, in particular, are intentionally designed to leverage and manipulate this predilection. "Social robots," Darling (2012, 1) explains, "play off of this tendency by mimicking cues that we automatically associate with certain states of mind or feelings. Even in today's primitive form, this can elicit emotional reactions from people that are similar, for instance, to how we react to animals and to each other." In other words, how something appears to be—how it operates and acts in real social situations and circumstances—might be more important than what it actually is (or has been assumed to be). For this reason, "we should," as Prescott (2017, 146) concludes formulating a kind of phenomenological maxim, "take into account how people see robots, for instance, that they may feel themselves as having meaningful and valuable relationships with robots, or they may see robots as having important internal states, such as the capacity to suffer, despite them not having such capacities."

2.2. From Phenomenology to Postphenomenology

Enabling this debate is a difference between the assumed (im)possibility of a final revelation, where the simulation could be compared to and evaluated against what actually is. This is, in fact, a crucial component of both Turing's and Searle's thought experiments. For Turing, the game of imitation is organized around a final exhibition and dramatic revelation. In order for the game to be concluded and for the results to be obtained, the interlocutor needs to be able to look behind the interface in order to see who or what had been doing the talking, i.e. another human person or a computer. For Searle, the point of the Chinese room demonstration—namely, that the simulation of an understanding of the language is not really an understanding of the language—is only possible insofar as we have privileged access to and can observer the inner workings of the room itself. Without this knowledge, one cannot evaluate the difference that separates simulation from the real thing.

The epistemological necessity and importance of this final reveal is evident in another parlor game, *To Tell the Truth* (Gunkel 2010). This TV game show, which ran intermittently on several U.S. television networks since its premier in the mid-1950's, featured a group of four celebrity panelists who were confronted with a group of three individuals or challengers. Each member of this trio claimed to be a particular individual who had some unusual background,

notable life experience, or unique occupation. The panel was charged with interrogating the three challengers and deciding, based on the responses to their questions, which one of the three was actually the person s/he purported to be—who, in effect, was telling the truth. In this exchange, two of the challengers engaged in deliberate deception, answering the questions of the panel by pretending to be someone they were not, while the remaining individual told the truth. The "moment of truth" came at the game's conclusion, when the program's host asked the pivotal question, "Will the real [insert name of the person] please stand up?" at which time one of the three challengers stood. In doing so, this one individual revealed him/herself as the real thing and exposed, by comparison, the other two to be false pretenders and imposters.

The final revelation, therefore, is a component that is necessary for resolving these phenomenological games. But this is where things also get complicated. First, there are situations where the conclusive revelation simply cannot take place for technical reasons. Consider the following example from the early days of online interaction on the Internet. In January of 1996, *Wired* magazine published a rather surprising interview with their self-proclaimed "patron saint," Marshall McLuhan. The interview was surprising, because at the time it was conducted, McLuhan had been deceased for over a decade. Here's how it happened, as explained in the article's introduction: "About a year ago, someone calling himself Marshall McLuhan began posting anonymously on a popular mailing list called Zone (zone@wired.com). Gary Wolf began a correspondence with the poster via a chain of anonymous remailers" (Wolf 1996, 1). So with whom (or what) was Wolf interacting? Was this "virtual McLuhan" the ghost of Marshall McLuhan, an imposter engaging in a little role playing, or an automated chatter bot programmed with, as Wolf (1996, 1) described it, "an eerie command of McLuhan's life and inimitable perspective"? Technically there was no way to answer this question. The interviewer was limited to what had appeared online and, because the exchange took place through the instrumentality of anonymous remailers, was unable to get behind the screen to ascertain the real thing as such. In the face of this dilemma, *Wired* did something that was, from the perspective of accepted journalistic practices, either “embarrassingly wrongheaded and pretentious” (Morrison 2006, 5) or incredibly innovative and inventive. Instead of writing off the whole affair as ultimately unverifiable, the editors decided to publish the interview as is, leaving the question about the true status of the real thing-in-itself open ended and unresolved. This approach recognizes the inaccessibility the thing as it is in-itself and the need to tarry with and make decisions based on nothing more than what appears in and by the interaction.

Second, there are circumstances where the revelation simply does not make a difference; where the appearance trumps knowledge of what actually is. This phenomenon had

been initially demonstrated and theorized by Byron Reeves and Clifford Nass (1996) in the computer as social actor (CASA) studies. “Computers, in the way that they communicate, instruct, and take turns interacting, are close enough to human that they encourage social responses. The encouragement necessary for such a reaction need not be much. As long as there are some behaviors that suggest a social presence, people will respond accordingly… Consequently, any medium that is close enough will get human treatment, even though people know it’s foolish and even though they likely will deny it afterwards” (Reeves and Nass 1996, 22). The CASA model, which was developed in response to numerous experiments with human subjects, describes how users of computers, irrespective of the actual intelligence possessed (or not) by the machine, tend to respond to the technology as another socially aware and interactive subject. In other words, even when experienced users know quite well that they are engaged with using a machine, they make, what Reeves and Nass (1996, 22) call, the “conservative error” and tend to respond to it in ways that afford this other thing social standing on par with another human individual. Consequently, in order for something to be recognized and treated as another social actor, “it is not necessary,” as Reeves and Nass (1996, 28) conclude, “to have artificial intelligence” strictly speaking. All that is needed is that they appear to be “close enough” to encourage some kind of social response.

This behavior is not limited to sophisticated social robots that are designed to elicit this kind of response. We appear to be able to do it with just about any old mechanism that has some kind of social presence, like the very industrial-looking EOD (Explosive Ordinance Disposal) robots that are being utilized on the battlefield. As Peter W. Singer (2009, 338) and Joel Garreau (2007) have reported, soldiers form surprisingly close personal bonds with their units’ EODs, giving them names, awarding them battlefield promotions, risking their own lives to protect that of the robot, and even mourning their death. This happens, Singer explains, as a product of the way the mechanism is situated within the unit and the role that it plays in battlefield operations. And it happens in direct opposition to accurate data concerning the actual facts of the device in question: They are just dumb technologies that feel nothing.

Third, there is a more sophisticated and empirically grounded articulation of phenomenology that can respond to and explain these results. Though it is rarely identified with the philosophical traditions of phenomenology, this is something that is already in play with the other minds problem. “How does one determine,” as Paul Churchland (1999, 67) characterized it, “whether something other than oneself—an alien creature, a sophisticated robot, a socially active computer, or even another human—is really a thinking, feeling, conscious being; rather than, for example, an unconscious automaton whose behavior arises from something other than

genuine mental states?" This problem, at least in its modern form, is often attributed to Rene Descartes, who argues that he can only be certain of his own mind—*cogito ergo sum*—but cannot be so sure about the mental state of the other entities he sees on the street and who interact with him. Because the knowing subject cannot ascertain—not with the kind of certitude that is often required for empirical knowledge—whether another entity possesses or does not possess a conscious mind, all that can be done is to interact with it and derive an assumption about "the mind of the other" from an experience of the interaction.

Like Turing's game of imitation, who or what the other actually is in-itself is information that is hidden from view. We are only able to make a conjecture based on the interactive behavior that is evident and observable. The temporal sequence involved with this inference is important and noteworthy. In interactions with other entities (whether human, computer, or otherwise), we infer the presence of various cognitive capabilities based on the externally observable behaviors they exhibit. In other words, we project a consciousness into the other. But then we reverse the direction of the vector, making an assumption that the derived result—the projection of conscious thinking into or onto the other—had been the original cause of the externally observed behaviors. Slavoj Žižek (2008a, 209) identifies the curious temporality of this operation—whereby an effect is posited as the original cause of that from which it is derived—with the neologism "retroactively (presup)posited." This formulation provides for a more radical mode of phenomenology, something that Verbeek, following Don Ihde, calls postphenomenology.

> The postphenomenological approach makes it possible to move beyond the modernist subject-object dichotomy in two distinct ways. First of all, Ihde shows the necessity of thinking in terms of human-technology associations rather than approaching human subjects and technological objects as separate entities… Second, human-world relationships should not be seen as relations between preexisting subjects who perceive and act upon a preexisting world of objects, but rather as sites where both the objectivity of the world and the subjectivity of those who are experiencing it and existing in it are constituted. What the world "is" and what subjects "are" arise from the interplay (Verbeek 2011, 15).

3. Conclusions

HCI research consists and can be organized in terms of three different paradigms or intellectual waves. Each paradigm focuses research efforts on certain questions and

problematics while pushing to the margin other issues and concerns that do not fit that particular frame of reference. In the end, therefore, the one question that remains to be answered appears to be this: Which paradigm is (more) correct? This question, however, is already a problem. Its mode of inquiry is formulated in terms of a particular frame of reference (or paradigm) that operationalize a set of epistemological commitments that are (or at least should be) already in question. In response to this problem—this question concerning the question—we can take note of three important consequences by way of conclusion.

3.1 Competing Paradigms

In the face of competing paradigms, the trick is not a matter of selecting one or the other and staking a claim to it, but of learning how to recognize which paradigm has been operationalized and how it simultaneously enables and forecloses what can be asked about and investigated. For instance, it is now common for users to say “thank you” to their digital assistants and speech dialogue systems (SDS), like Amzon’s Echo/Alexa, Google Home, and Apple’s Siri. Each HCI paradigm frames a different way of conceptualizing and evaluating this phenomenon. From a first wave perspective, saying “thank you” to an SDS does not appear to have any noticeable impact on the control of the device. When looked at through the lens of first wave HCI, this expression of gratitude could be criticized as unnecessary, superfluous, or both. From a second wave perspective, saying “thank you” to a computational mechanism does not seem to provide any additional input that could be processed by the SDS object. It would be a kind of social “noise” that is ultimately unimportant to the exchange and processing of information. From a third wave perspective, however, one can begin to perceive how this seemingly superfluous and noisy performance is part and parcel of the social milieu. Following what had been discovered in the CASA studies, human users extend social standing to computers not because they are (or can be known to be) intelligent and conscious beings, but because they occupy a social role and function. There is a significant co-creation of social presence in the simple act of saying thank you to Alexa or Siri, and third wave HCI allows for us to see how this functions, why it is important, and what impact it has on human sociality.

3.2 Speculative Science

Following from this, HCI needs to become a “speculative science.” For a phenomenological theorist, like G. W. F. Hegel (1969), "speculative" is not, as is often the case in colloquial usage, a pejorative term meaning groundless consideration or idle review of something that is often inconclusive and indeterminate. Instead, Hegel understands and utilizes

the word “speculative” in its strict etymological sense, which is derived from the Latin noun *speculum*, meaning mirror or reflector. “Speculative,” therefore, designates a form of self-reflective knowing. According to Slavoj Žižek, it designates an epistemology that explicitly recognizes the way that what comes to be known is always and already conditioned by the situation or condition of knowing. “At the level of positive knowledge,” Žižek (2008b, 3) writes, “it is, of course, never possible to (be sure that we have) attain(ed) the truth—one can only endlessly approach it, because language is ultimately self-referential, there is no way to draw a definitive line of separation between sophism, sophistic exercises, and Truth itself (this is Plato's problem). Lacan's wager is here the Pascalean one: the wager of Truth. But how? Not by running after ‘objective’ truth, but by holding onto the truth about the position from which one speaks.” The strategic advantage of this particular approach (an approach that Verbeek and Ihde would call “postphenomenological”) is not that it provides one with privileged and immediate access to the real thing in its raw or naked state but that it continually conceptualizes the place from which one claims to know anything and submits to investigation the particular position that is occupied by any knowledge-claim whatsoever.

3.3 *Social and Ethical Consequences*

Finally there are social and moral consequences to this way of thinking and conducting research. Once it is recognized that knowledge production is the product of epistemological paradigms and that there are competing paradigms that frame different ways of knowing, one might be tempted to ask which one or ones are correct or true. Typically responses to this question pull in two opposite and ultimately unsatisfactory directions—democratism and totalitarianism. "Both liberal-political democracy and 'totalitarianism.'" Žižek (2002, 176) writes, "foreclose a politics of truth. Democracy, of course, is the reign of sophists: there are only opinions; any reference by a political agent to some ultimate truth is denounced as 'totalitarian.' What 'totalitarianism' regimes impose, however, is also a mere semblance of truth: an arbitrary Teaching whose function is simply to legitimize the pragmatic decisions of the Rulers." Both democratism and totalitarianism attempt to respond to and take responsibility for competing paradigms. One does so by saying that anything that appears to anyone is acceptable and true; the other by making what is ultimately an arbitrary decision and imposing a form of orthodoxy. What is important here is not what makes these two extreme positions different. What is important is what they share in common. Both democratization and totalitarianism are devised in an effort to contend with the perceived threat of relativism—"the claim that no universally valid beliefs or values exist" (Ess 1996, 204). But as I have argued elsewhere (Gunkel 2010 and

2012) “relative,” which has an entirely different pedigree in a discipline like physics, need not be construed negatively and decried, as Žižek (2006, 281) has often done, as the epitome of postmodern multiculturalism run amok. Robert Scott (1967), for instance, understands "relativism" to be a positive rather than negative term: "Relativism, supposedly, means a standardless society, or at least a maze of differing standards, and thus a cacophony of disparate, and likely selfish, interests. Rather than a standardless society, which is the same as saying no society at all, relativism indicates circumstances in which standards have to be established cooperatively and renewed repeatedly" (Scott 1967, 264).

Charles Ess (2009, 21) calls this alternative “ethical pluralism.” “Pluralism stands as a third possibility—one that is something of a middle ground between absolutism and relativism... Ethical pluralism requires us to think in a ‘both/and’ sort of way, as it conjoins both shared norms and their diverse interpretations and applications in different cultures, times, and places” (Ess 2009, 21-22). Likewise Luciano Floridi (2013, 32) advocates a “*pluralism* without endorsing *relativism*,” calling this “middle ground” *relationalism*: “When I criticize a position as *relativistic*, or when I object to *relativism*, I do not mean to equate such positions to non-absolutist, as if there were only two alternatives, e.g. as if either moral values were absolute or relative, or truths were either absolute or relative. The method of abstraction enables one to avoid exactly such a false dichotomy, by showing that subjectivist position, for example, need not be relativistic, but only relational” (ibid.). Like Žižek, Floridi recognizes that truth can be neither totalitarian nor completely democratized such that “anything goes.” It is always formulated and operationalized from a particular position of “enunciation” (Žižek’s Lacanian inspired terminology) or what Floridi calls “level of abstraction,” which is dynamic and alterable. The task of responsible research, therefore, is to learn how to take responsibility for these necessary alterations in perspective and their social and moral consequences.

References

Boden, Margaret, Joanna Bryson, Darwin Caldwell, Kerstin Dautenhahn, Lilian Edwards, Sarah Kember, Paul Newman, Vivienne Parry, Geoff Pegman, Tom Rodden, Tom Sorrell, Mick Wallis, Blay Whitby and Alan Winfield. (2017). Principles of robotics: Regulating robots in the real world. *Connection Science* 29(2):124-129. http://dx.doi.org/10.1080/09540091.2016.1271400

Callicott, J. Baird. (1989). *In Defense of the Land Ethic: Essays in Environmental Philosophy*. Albany, NY: State University of New York Press.

Churchland, Paul M. (1999). *Matter and Consciousness*. Cambridge, MA: MIT Press.

Coeckelbergh, Mark. (2012). *Growing Moral Relations: Critique of Moral Status Ascription*. New York: Palgrave MacMillan.

Darling, Kate. (2012). Extending legal protection to social robots. *IEEE Spectrum*. http://spectrum.ieee.org/automaton/robotics/artificial-intelligence/extending-legal-protection-to-social-robots

Ess, Charles. (2009). *Digital Media Ethics*. Cambridge: Polity.

Floridi, L. (2013). *The Ethics of Information*. Oxford: Oxford University Press.

Garreau, Joel. (2007). Bots on the ground: In the field of battle (or even above it), robots are a soldier's best friend. *Washington Post*, 6 May. http://www.washingtonpost.com/wp-dyn/content/article/2007/05/05/AR2007050501009.html

Gunkel, David J. (2010). The Real Problem: Avatars, Metaphysics and Online Social Interaction. *New Media & Society* 12(1):127-141. https://doi.org/10.1177/1461444809341443

Gunkel, David J. (2012). *The Machine Question: Critical Perspectives on AI, Robots and Ethics*. Cambridge, MA: MIT Press.

Harrison, Steve, Phoebe Sengers and Deborah Tatar. (2007). The Three Paradigms of HCI. CHI 2007, 28 April-3 May, San Jose, CA.

Hegel, G. W. F. (1969). *Science of Logic* (A. V. Miller, trans.). Atlantic Highlands, NJ: Humanities Press International.

Kuhn, Thomas S. (1996). *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.

Morrison, James C. (2006). Marshall McLuhan: No Prophet without Honor. *AmeriQuests* http://ejournals.library.vanderbilt.edu/ojs/index.php/ameriquests/issue/view/4/showToc

Prescott, Tony J. (2017). Robots are not just tools. *Connection Science* 29(2):142-149. http://dx.doi.org/10.1080/09540091.2017.1279125

Reeves, Byron and Clifford Nass. (1996). *The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places.* Cambridge: Cambridge University Press.

Searle, John. 1999. The Chinese room. In *The MIT Encyclopedia of the Cognitive Sciences*, ed. R. A. Wilson and F. Keil, 115–116. Cambridge, MA: MIT Press.

Scott, R. L. (1967). On viewing rhetoric as epistemic. Central States Speech Journal 18(1): 9-17. https://doi.org/10.1080/10510976709362856

Shannon, Claude E. and Warren Weaver. (1963). *The Mathematical Theory of Communication*. Urbana, IL: University of Illinois Press.

Singer, Peter W. (2009). *Wired for War: The Robotics Revolution and Conflict in the Twenty-First Century*. New York: Penguin Books.

Turing, Alan. (1999). Computing Machinery and Intelligence. In Paul A. Meyer (ed.), *Computer Media and Communication: A Reader*. Oxford: Oxford University Press.

Turkle, Sherry. (2011). *Alone Together: Why We Expect More from Technology and Less From Each Other*. New York: Basic Books.

Verbeek, Peter-Paul. (2011). *Moralizing Technology: Understanding and Designing the Morality of Things*. Chicago: University of Chicago Press.

Wiener, Norbert. (1996). *Cybernetics: Or Control and Communication in the Animal and the Machine*. Cambridge, MA: MIT Press.

Winnograd, Terry. (1990). Thinking Machines: Can there be? Are we? In Derek Partridge and Yorick Wilks (eds.), *The Foundations of Artificial Intelligence: A Sourcebook*. Cambridge: Cambridge University Press.

Wolf, Gary. (1996). Channeling Mcluhan. *Wired* 4(1). http://www.wired.com/wired/archive/4.01/channeling_pr.html

Žižek, Slavoj. (2002). Revolution at the Gates. London: Verso.

Žižek, Slavoj. (2006). *The Parallax View*. Cambridge, MA: The MIT Press.

Žižek, Slavoj. (2008a). *For They Know Not What They Do: Enjoyment as a Political Factor*. London: Verso.

Žižek, Slavoj. (2008b). *In Defense of Lost Causes*. London: Verso.