

Nonbiologic Objects as Actors

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We generally understand interactions between human actors and nonbiologic objects (NBOs) as being indirect, with the human actor acting for the NBO and using the NBO as a “thing.” Under certain circumstances, however, human actors enter into direct interaction with NBOs and take on extra work in this process. Actors must “do mind” for the nonbiologic other to perceive “another” with whom it is possible to interact. The fiction that mind can exist where thought cannot be present is counterintuitive, making this process tenuous and heavily dependent upon the circumstances at hand. Four successive contingencies must be present to make possible the perceptual shift from object to actor. First, the actor must perceive the object in question as capable of independent action, whether or not the human actor initiates said action. Second, this separate and active status must become apparent through actions that threaten the human actor’s desired goals. Third, these goals must be of sufficient urgency to warrant continuing in direct interaction with the object rather than reverting to nonanthropomorphized normal interaction. Finally, the object at hand must be necessary for completing the desired task.

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Within the field of cultural studies it has become a maxim that objects are “socially alive” (Knappett 2002). Human behavior not only involves interpreting and manipulating objects but is in turn shaped by them. Generally this process is understood as arising from aspects of the object at hand, such as utility or perceived potential, which prompt certain responses from us. For example, Latour’s (2000, cited in Knappett 2002) discussion of the “Berliner key” highlights the social pressures brought to bear by even the most ordinary objects. In Berlin, apartment dwellers must use a unique key to enter their building. After entry, this key must be turned again in the lock once the door has been closed or the key cannot be retrieved. This

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key, also called a Berlin key, forces the user to shut and secure the door. The apartment resident has no choice in this matter, and thus the Berliner key collectively “enforces strict boundaries on social relations, with tight controls on who can enter and leave the building” (Knappett 2002:99). Just as we grant objects a sort of “life” through usage and adaptation, we are also inevitably taken as objects by both self and other during human interaction (Mead 1934).

Interactionist scholarship has focused mainly on interaction and meaning-making among minded persons. A few notable exceptions illustrate how individuals can project mind onto nonminded biologic agents for the purposes of interaction (see, e.g., Pollner and McDonald-Wikler 1985; Sanders 2003). However, such work has not extended the concept of “doing mind” to include how human actors engage nonhuman nonbiologic “others” in interaction. Treatments of inanimate objects as agentic are rarer still, and scholarship that suggests the possibility that objects can be agents does not adequately address how said objects might become actors in an immediate sense. In this article, I attempt to further the discussion of the agency of objects by exploring the contexts in which we grant agency to inanimate, or nonbiologic, objects (NBOs) in the interaction process. I must make one important distinction at the outset. Whether or not it is inherently “possible” or “real” for these objects to participate actively in interaction is irrelevant. Interaction does not require that both parties willingly and purposefully engage with one another. All that is required is the assumption by one party that this is so, as anyone who has ever mistaken a stranger’s wave and waved enthusiastically in return may attest. Nor is it required that both parties be able to symbolically interpret and share meaning (see Pollner and McDonald-Wikler 1985; Sanders 2003). In my discussion of object-as-actor, I combine interactionist writings on the concept of self and mind with Schutz’s (1970) work on relevance and typification to argue that human-NBO interaction indicates the ubiquity of doing mind as human problem-solving activity. I argue that human thought is interpenetrative and suggest that this tendency is central to human problem-solving behavior—so much so that if an interactive partner does not possess sufficient faculties to allow this process, we will recast it/them through selective perception to allocate such faculties on a limited, temporary basis.

It is this aspect of *perception* of the other—that the other can act meaningfully and independently in even a small way—that is missing from current discussions of object agency and interaction. Since the process of selective perception and interpretation is heavily contextual, I suggest that certain conditions must be present for this shift from “thing” to actor. We do not grant all objects actor status, nor can we if we are to go about our business with the myriad products, tools, and possessions that populate our lives. People do work when they grant actor status to an NBO. This work makes situated “sense,” despite the implausibility of a situation, when four circumstances occur simultaneously: (1) we see an NBO as being capable of independent action, (2) this action or actions threaten our goals, (3) said goals are of sufficient importance that we must address the threat, and

(4) the NBO is critical to the task at hand and thus cannot be easily or quickly replaced. In making my case, I first define the difference between agent and actor; the distinction is fine, but critical. I then discuss agency in light of perceived ability and action to explore the first condition for human-NBO interaction. Finally, I discuss the nature of “mind work” that one interactant may do for another and use notions of typification and relevance to address the question of why such work makes sense in a given moment.

AGENTS AND ACTORS DEFINED

Agency, in the sociological sense, is not simply the ability to perform an action. We may perform any number of acts in pursuit of a given goal but do not have sufficient agency to purposefully affect outcome. As Stevis (2002) suggests in his piece on actors in an institutional environment, “agents” are those who have both voice and power, which together provide many options for meeting goals. In this article, I define *agent* as an actor who has the ability to direct meaningful, minded, and sustained behavior toward a desired end within the context of interaction, regardless of the efficacy of these efforts. I use the derivative term *agency* to describe the ability, inherent or granted, to affect outcome. All agents possess some degree of agency, but agency itself does not guarantee agent status.

By contrast, I define *actor* as a member of an interaction pairing or group who is perceived as being able to act independently of the other party(ies), regardless of whether this behavior is minded, sustained, or meaningful in a conventional sense. Thus all agents are actors but not all actors are agents. Additionally, there is a temporal component to the statuses of agent and actor. Barring accident or extreme circumstance that constrains ability to form and work toward goals, an interactant who is an agent will continue to be an agent, and thus actor. However, nonagent actor status may be temporarily granted to another as determined by immediate context. This is the case, I argue here, when we temporarily understand NBOs as actors within a given interaction. We tend to indicate that this process is occurring or has occurred through speech; either we talk “to” the NBO or relate the story of such an “interaction” after the fact, using language that places the NBO as the antagonist (or reluctant and unreliable collaborator) in a tale of difficulty or challenge. This process is quite common. A child who cannot get a toy to do what he or she wants it to will often throw down the toy in frustration and call it names such as “stupid” or “mean.” While anthropomorphism and human-NBO interaction is common among children, we do not outgrow the tendency as we get older. We merely develop greater understanding of cause and effect, and of the working of objects, and thus are less easily “fooled” that an NBO is capable of acting against us. However, in moments of extreme frustration, or in circumstances where we do not understand well the workings of an object, the seemingly childish tendency recurs. Witness the amateur carpenter who, having hit her thumb with a hammer, throws the “stupid goddamned hammer!” down in a remarkably similar outburst.

OBJECTS AND NONHUMAN AGENCY

According to Mead (1934), we humans enter into social relations with the objects that share our world. The process is inevitable. There is no objective reality “out there” that we can comprehend, since we can only experience and understand our encounters with objects through the filtering process of meaning-making. We cannot know what an object “really is.” Human thought and behavior effectively construct the essence of the object at hand, whose meaning is produced through human actions toward and usage of the item (Hewitt 2003). At the same time, our understanding of a given circumstance requires that we take the role of others involved, whether these others are human or not. In a famous example, Mead (1934) suggests that an engineer who builds a bridge is interacting with nature in much the same way that we might interact with the engineer. The engineer takes nature as other, just as we would consider him or her to be other in a human-to-human scenario. He or she must take various aspects into account—how much load will this bridge have to bear and under what environmental stresses—during design and construction to adequately achieve his or her goal. In this sense, “thing” becomes “other” and influences human behavior.

More recent scholarship on the nature of human-object interaction expands the role of this other from projected to active participant. For instance, Knappett (2002) argues in favor of dissolving the conceptual line drawn between human-as-agent and object-as-thing. A human working at a computer is not simply a user manipulating a tool. She is a node in a network of agents, as both parties in this scenario contribute to completing a task. In this view, we do not own agency: agency is relocated and becomes a collaborative resource arising from the interplay between human and thing. Similarly, Weigert's (1997) theory of transverse interactionism outlines how humans interact with an active but nonsymbolic natural environment. In both Knappett and Weigert, agency is diffused and shared among biologic and nonbiologic agents. Objects and environments affect not only individual behaviors but social mores as well, constraining the field of what is possible or permissible. But at what point, under what conditions, can we delineate an NBO as an actor?

While Knappett (2002:99) states that “mind is in matter and matter is in mind, indivisibly,” he stops short of suggesting that shared agency results in our perception of a nonbiologic agent as a potentially independent, even “minded,” actor. Rather, it is the human mind that extends past the body's boundaries and can be activated or triggered through manipulating objects. Mind, to Knappett, is thus both “embodied” and “extended” (p. 99). The body enacts mind when physical processes become part of thinking, as occurs when players of Scrabble physically manipulate tiles to help puzzle out what words might be formed (Clark 1997, cited in Knappett 2002). Extended mind may be best exemplified through the Berliner key example. As Knappett notes, this type of key relocates decisions about safety and security in the physical realm of the object. Still, though such an object can be seen as active, the site of action occurs in the interplay between object and individuals—both actors

(Knappett 2002). In neither case is the agent taken for a truly participatory actor in interaction. If my apartment building uses a Berliner key as a security measure, this will oblige me to lock the door behind me and will raise the expectations of others that I will conform to this requirement, but I may reasonably believe that the action in this process will *involve* said key but be *accomplished* by myself. I share agency, but not action, with the key.

Weigert (1997) provides a stronger case for both agency and action of an NBO. His concept of transverse interactionism, or interaction between humans and NBOs, conceptualizes this other as both *nonminded* and *active*. However, Weigert does not explain how an individual might conceptualize and then directly interact with this active other. This is not a shortcoming of Weigert's work but merely the result of its scope. Weigert's active NBO is the natural environment in which all humans must live. As he notes throughout his work, perceiving this other is a necessary but difficult accomplishment. Environment is a large-scale concept, one without many immediately accessible physical markers. We often fail to notice the link between our behavior and environmental response because of our focus of attention. We act on one level where we "see" the goals and results of our actions as right and good because our vision is limited to our immediate surroundings and going concerns. Most of us do not have the breadth and depth of vision to understand that while our one action may have negligible environmental impact, the repeated actions of many persons taken cumulatively may bring consequences that will weigh on our future options. I am effectively interacting with the environment, whether or not I fully realize my immediate contribution or accurately prevision my part in the likely result. The environment, for its part, will "respond" in ways that will affect me, but I may fail to link this response to my earlier actions. Or, since environmental responses may progress very slowly, I may not notice that any response is occurring. Interaction has taken place, but unfortunately the time lag in response and the cumulative essence of human action in this scenario make it difficult to pin down and contextualize the immediate process. Weigert (1997) suggests a revisioning of the natural world that is sensitive to our interdependence with environment as the means to circumvent this problem of scope. While I cannot ride the bus to work tomorrow and expect to receive environmental feedback, I can take the position of what Weigert (1997:27) terms the "generalized environmental other" and make informed decisions with environmental impact (i.e., response) in mind. Although aspects of the natural environment are surely biological and alive, in modern Western society we generally do not take the environment writ large as an individual, living, minded or nonminded actor, separating Weigert's theory from others that consider problematic interaction.

Taken together, the work of Weigert (1997) and Knappett (2002) suggests means by which we both grant inanimate objects agency and perceive them *as actors* in a given exchange. The object must affect our behavior, we must perceive these effects as resulting from the active nature of the object, and we must believe, at least for a time, that we can provide a different response that might influence the object in turn.

This last point is the stickiest. I manipulate objects, react to their presence, and adjust my behavior when necessary to achieve my aims. When I concede the possibility of an NBO as actor, this feels suspiciously like allowing an object to manipulate me. Being manipulated is hard enough to accept when the manipulator is a living organism; who or what am I struggling with if the manipulator is not?

ANIMISM, INTUITIVE ONTOLOGY, AND “NICE” MACHINES

Young children show no such compunction about conversing with objects. Several stages of development contribute to children’s comfort with animism. According to Knight, Power, and Mithen (1998), children have a sense of animism before they have a sense of self, because childhood interaction with objects in the immediate environment occurs before the full development of language. They know these objects in an immediate sensory way: their experience of the given other is not dependent on reflexivity. The other in this sense is not lesser, as neither has a self.

Once children become better able to distinguish themselves from an other, anthropomorphism takes on a more emotional role. The psychoanalytic literature on the development of fetishistic behavior suggests that emotional attachment to a beloved object, termed a “transitional object,” is a normal part of development in late infancy and early childhood (Winnicott 1953). Transitional objects, usually soft, comforting objects chosen by the child as special, help the child to separate from his or her mother. The object’s purpose, however, is to help the child move from a sense of omnipotent control to one of physical manipulation of an inanimate item. Greenacre (1969) compared the fetish and the transitional object, suggesting that the transitional object was “the first not-me object” that “is never totally not-me.” Normal psychological development requires that the child relinquish the projection process that makes the transitional object magical. If the child does not master this process, fetishistic behavior may result. In the psychoanalytic tradition, the developing human mind ultimately accepts the division between self and other, and between animate beings and nonanimate anthropomorphized objects.

Children do not fail to recognize these differences, however. Recognition, acceptance, and application should not be confused. The process of animism, although widespread, is not necessarily intuitive in adults or children. Rather, recent research challenging the Piagetian tradition suggests that it is *counterintuitive*, though widespread (Boyer 1996). Even infants show the ability to distinguish between animate and inanimate objects, most likely through noticing independent movement performed by animate objects (Boyer 1996). The infant or young child projects personality and belief onto the inanimate *in spite of* having a sense (if not understanding) of this distinction. According to Boyer, children develop a sense of difference between animate and inanimate, and of the link between action and intent, through external stimuli, which become the basis for an *intuitive ontology* of the world of what is living, what is not, and how action is directed by intent. Animism, then, does not extend from intuition but stands counter to it and relies on “a host of

domain-specific projections” situated in a hierarchy of salience and psychological importance (p. 87).

All forms of anthropomorphism are challenges to human intuition and to an innate sense of what is and is not animate, and what is and is not part of self. The process of anthropomorphism requires projection and most likely occurs within a specific set of circumstances. According to Guthrie (1993), anthropomorphism is a more complex structuring of the world of understanding, since it involves the addition of perceptual inference to external stimuli. The process is sophisticated and ordered. All anthropomorphism will take the understanding of the object at hand to the most sophisticated level possible, based on the available ontological theories the agent possesses: live or nonlive, intentional or nonintentional. Based on stimuli *in the moment*, we ascribe the highest level of sophistication possible to the object at hand. In other words, “live” and “intentional” are more active categories, with “nonlive” and “nonintentional” being the null hypotheses. The smallest evidence of live or intentional action encourages perceptual shift, allowing us to ascribe live and intentional statuses to objects more readily. Therefore, as Boyer (1996) terms it, animistic belief is a paradox of perception, relying on yet challenging humans’ innate perceptions of reality.

Excellent examples of this process can be found in the literature on human-computer interaction or interface. Focused on forms of communication between humans and machines, most of this research suggests that the phrases and word choices computer respondents use influence their perception in animistic ways. For instance, Cassell and Bickmore (2003) have shown that human users’ relationships with a computer agent can be actively manipulated. We perceive computers as having a number of emotionally perceived traits, such as likability, friendliness, and cooperativeness, based on such factors as whether the computer employs humor (Morkes, Kernal, and Nass 1998), flattery (Reeves and Nass 1996), and reciprocal self-disclosure (Moon 1998) as interaction tactics. We will have positive feelings toward the machine, implying that the humor or flattery or disclosure “belongs” to the computer. Other models of human-machine interaction used embodied conversational agents, or ECAs, which are character programs within computers that generate a cartoon “face” or full person that has been designed to interact with humans. Generally, ECAs are sophisticated programs with the ability to recognize and mirror embodied behaviors including linguistic tone, utterance, and gesture (for a summary of the abilities of ECAs, see Cassell et al. 2000).

The model of human-NBO interaction exemplified by ECAs brings us closer to understanding the phenomenon of granting actor status to an NBO. However, it is still insufficient. There is a “second-order mind” at work within an ECA, as a human programmer has set up a system of triggers and responses. Also, the user interacting with an ECA is speaking to a “face,” which encourages him or her to think of the NBO as a who rather than a what.

In each instance (verbal recognition, face, and expression), the programmer has done work to ensure that the computer or ECA uses certain phrasing, tone, and

gesture to evoke a response from a human user. The very act of programming provides stored “mind” to the interacting machine, as the role of the human other has already been presupposed and parameters of responsive action set up based on one human’s understanding of a general human other not yet met.

If we are to gain a more-nuanced understanding of how we project actor status onto an NBO, we must consider NBOs that are nonverbal. We can then see how we “do” both self and other to have the interaction partner needed at the time of interaction. Several components of projection will become clearer through this effort. First, a sense of mind, or independent intentionality belonging to other, is necessary if we are to take this other as a party in interaction. Second, we can furnish mind to an NBO based on exigent situational and emotional needs in order to set the stage for the taking of roles. Finally, we are more likely to make the perceptual shift necessary to project actor status onto an NBO when the circumstances of immediacy (temporal or physical) and threat are present.

THE NECESSITY OF MIND

The idea that we might enter into direct interaction with a thing is for most adults counterintuitive, even uncomfortable. It is one thing to understand interaction with objects where one shares agency but directs action. If action is to be shared, it seems there should be someone else involved. Cohen (1989) illustrates this conundrum in his typology of human-object interactions. For Cohen, such interactions take several forms: anthropomorphic interactions with biologic nonhuman objects, anthropomorphic interactions with nonbiologic nonhuman objects, and “normal” (p. 195) or nonanthropomorphic interactions with nonhuman objects. We experience tension when we must share both agency and actor status, as illustrated in Cohen’s vignettes (man and dog, man and ship on a stormy sea). In each case, we are not the only ones doing something. One’s dog will act back, and one may experience one’s control of a boat as tenuous. The key to my argument is illustrated in these circumstances: the nonhuman other is capable of action that the human actor cannot wholly direct or envision.

In contrast, there is no such conflict in the other form of interaction Cohen describes—a normal human interaction with a nonhuman object. In normal interactions between humans and nonhuman objects, the active role in interaction takes place in the interior of the human, by taking the role of the nonhuman other and adapting responses accordingly. The examples Cohen gives are Dewey’s (1910, cited in Cohen 1989) elaboration of the thought process and Mead’s apocryphal story of the engineer constructing a bridge. In the first, Dewey’s student is riding a ferryboat and sees a pole sticking out from an upper deck. The student observes various aspects of the pole, and forms and discards a series of hypotheses about the pole’s purpose accordingly. Cohen (1989:198) argues that this process may be understood as the student requesting data from the pole and the pole responding by “providing the data,” but it is clear that it is the student who interprets and responds to this

data and that the pole offered no corresponding gesture. It appears that if there is to be an act where efficacy and action must be shared, we require someone against whom to struggle or, presumably, with whom to collaborate. This is a striking set of circumstances, as it necessitates that we perceive a sense of discreteness or separate volition—a sense of identity as “me” versus “you” and the uncertainty that this entails—belonging to the other. In the case of human interaction with NBOs, we must perceive that the other has “mind” of a sort, when the other is incapable of thought.

IDENTITY, MIND, AND DOING MIND FOR ANOTHER

Taking into account the differences between mind and thought, it is not terribly surprising that mind is required for actor status while thought is not. Several facets of mind suggest its primacy and allow it to stand independently of thought. First, we produce and maintain identity through minded behavior, not simple thought, and an identity of sorts seems to be required for an interactant to be perceived as actor. Second, thought cannot save my social identity if I am no longer perceived as being interactive or minded. Most important, mind *can* preserve a social identity, if a limited one, where no thought is present or where present thought cannot be communicated.

Mind is often described as the self-referential internal dialogue that we use to sort through and come to an understanding of objects in the field of action relevant to completing an act. I must be able to think to have mind, but thought itself is not sufficient. Animals have the ability to think, even to react and interact, but do not possess mind (Mead 1934; for opposing viewpoints, see Irvine 2004 and Sanders 2003).

The key element missing from animal thought process is discernment among prospective possible outcomes (Meltzer 2003). Animals will react to problems through trial and error, or through random attempts to resolve a situation, while humans prevision outcomes and sift through alternatives in choosing a course of action (Meltzer 2003). Thus mind, as often understood, requires the ability not only to use language and symbols as necessary to sort, evaluate, and rank alternatives but also to predict likely outcomes of choices based on a sense of the other in a given situation.

The person who envisions an action and its likely consequences is both problem solving and self-producing. Without mind, there is no self, or reflexive human consciousness. I “am” because I can consider myself as object and choose my actions in light of what I believe you will see if taking this same view (Mead 1934). I cannot know who I am or how I should behave if I cannot contextualize my position and behavior within a given set of circumstances. The problems I meet in the performance of daily life, and my reactions to them, come to define me. As Meltzer (2003:258) states, “When a problem interrupts the smooth flow of an act toward its completion, the scene is set for minded behavior.” It is this tension that requires me to clarify my position to myself and take into account the desires and actions of

others. By concerning myself with how I will appear to another and aiming my actions toward a goal in light of this provisioned self, I bolster who I am through a projected understanding of what I may do and how you will react. Minded behavior is therefore the internal work of continually reproducing and defining the self, despite its seemingly problem-focused outward directedness.

Such work is not without its pitfalls. When minded behavior goes awry, self is threatened. According to Wiley (2003), the self is not a sedimented, unified construct. Rather, the self is an ongoing project, a self-fulfilling prophecy, always subject to disruption or harm. Neither self nor mind can be taken for granted as inherently human and secure. In infancy, there is no mind, only the potential that such an internal conversational self may develop through interaction with caretakers (Wiley 2003). Mindedness, or the process of self-talk through which one takes oneself as an object of scrutiny for the purpose of untangling motives, goals, alternative possible actions, and the like, is a learned skill. It is developed through interacting with other minded persons, and through this process we come to take on a socially recognized identity. The link between mind and self is so strong that factors which can be said to harm, inhibit, or otherwise circumvent minded behavior inevitably bring commensurate costs to self. For instance, persons who suffer from Alzheimer's disease suffer a loss of self that is linked to others' withdrawal of the recognition of their interactive capabilities (Sabat and Harre 1992). This loss is not inevitably "caused" by the disease. Aspects of self and personal identity persist into the very last stage of dementia (Sabat and Harre 1992). It is at this point that others' perception of minded behavior on the part of the sufferer becomes almost impossible to achieve. Alzheimer's disease does not directly steal who a person is so much as it presents increasingly difficult obstacles for the collaborative process of bringing self into being through interaction (see Karner and Bobbit-Zeher 2005). A less drastic but still illustrative example is found in Wiley's (2003) description of how parents teach infants about the world and their place in it. In doing so, parents (or, one presumes, other primary caregivers) become the "midwives" who usher in the social birth of a new identity (p. 506). If all goes well, early socialization not only stimulates the development of mind but also provides a firm foundation for a lifelong experience of selfhood. Not all parents are equally skilled, however. Those who are "lousy at parenting" will not only fail at the instrumental tasks of caregiving but also do lasting harm to a nascent identity, resulting in an infant who is "developmentally delayed" (p. 507). In Wiley's usage, developmental delay describes a learned and sensible hesitation to "become selves" through social interaction (p. 507). Babies whose earliest social experiences are extremely negative may simply decide that the world is an inhospitable arena and the game of interaction is not for them.

As a social product called into being through interaction, identity requires cooperative work. The collaborative nature of social identity provides a loophole in the mind-self compact. Identity is socially produced even when individually experienced. Necessarily, then, the interpretive work of producing identity is performed "out there," whether in action or projected thought. Where both parties in an

interaction cannot equally share the burden of this work, one may redistribute the load by doing mind for the other (see Sanders 2003:407). This mind work is especially visible in the social relations between humans and their animal companions. It is common for humans interacting with companion animals to then give voice to these inferences and “translate” what the pet is “saying” (p. 407).

The process of doing mind is found in other interactional circumstances where a person capable of minded behavior is paired with an object (human or not) who either cannot be assumed to have mind in the conversation-with-self-about-self sense or who may be reasonably expected not to have said mind. In these instances, the minded actor performs a type of symbolic ventriloquism through giving voice. I would like to extend the concept of giving voice “for” another (or the verbal translation of what is being intentionally said) to giving voice “to” the other through verbal interpretation of the supposed meanings or desires held by the object and displayed through action. This is a key distinction. I am not merely interpreting in the second instance. When I give voice to an object, I engage in a two-part intertwined process of construction and forgetting. Not only must I provide an interpretation of action as being motivated and directive, I must then react to the motivated and determined other that I have constructed. In doing so I must take the position that this other exists and acts independently of myself. If I recognize that the object is not other except in my own perception, I am chasing my own tail, as it were. In essence, I must take the role of the other that is actually and only myself, yet treat this other’s portion of the exchange as a unique contribution. In a scene where I am giving voice for most or all of the other’s lines, it will be especially difficult for me to maintain the belief that the scene is a dialogue. If my distancing falters and this fiction slips, I will realize I am speaking with myself. At that point there is one mind, mine, and therefore only one actor. The object will become a mere thing in my eyes, and I am likely to chide myself for being fanciful and withdraw from direct interaction.

For instance, my cat may butt its head against my hand in a request to be petted. I may speak back to this “voice,” depending on what is foremost in my mind but attributing understanding and consequent reaction to the animal. If I have had a hard day, I may tell the cat about my day and thank it for its sympathy. If the cat then runs to its food dish, I may feel silly for having interpreted the earlier behavior as sympathy. In a more extreme example, if I am downloading a file from an unreliable computer, I may provide verbal encouragement as though my exhortations will have an effect on the outcome. If another person were to walk into the room at that moment, I would likely be embarrassed. The uninvolved person’s presence would cause me to scrutinize my actions, and I would look at the situation from an outsider’s perspective—and see a woman begging her computer, “Come on, don’t eat my file this time, please?” In each instance, I suspend my knowledge of what or who an object is because of current need; when the circumstances at hand shift, so do my perceptions. I realize that I have been making up cat sympathy or computer aggression that was not present.

In the case of doing mind for a beloved but nonsymbolic biologic other, the extra work of distancing and giving voice makes sense. For instance, despite great evidence to the contrary, a parent of a severely disabled child may persist in providing mind and capabilities not present to more objective observers (Pollner and McDonald-Wikler 1985). Less investment means less willingness to perform the extra work of doing mind. You may be willing to interpret your beagle's daily actions, but unless I am also fond of the animal I am not likely expend any of my own internal resources toward this coproduction of dog identity. On the other hand, emotional investment does not have to be located in the object itself to be sufficient to prod me toward doing mind for the object. If I have never met your beagle before and I encounter him sans leash during my daily walk, I may not concern myself with who your dog "is" in a larger sense, but I certainly want to know who it is in relation to myself. In this case I am willing to do mind briefly to manage a given set of circumstances. Your dog, which might have been an attractive biologic object if on a leash (i.e., nice coat, well-behaved, likable breed), has become minded actor with intent that is in my best interests to consider.

Doing mind should not be confused with the more mainstream interactionist concept of taking the role of the other. In any interaction, one party constantly interprets the actions of another in order to interpret the other's goals, motives, and signs. When two minded agents, for instance two verbal humans, interact, this process presupposes that each *has* goals and is capable of minded interpretation in turn. If they lack this ability to hold internal conversation of a sort, and thus to formulate and change impressions of the given circumstances in both self and other, then the process of taking the role of the other is short-circuited and interaction becomes problematic. Doing mind, then, lays the groundwork for taking the role of a nonverbal (biologic or nonbiologic) other. Without mind, there is no role to take because the other cannot be understood as able to perform a role. It is this aspect of doing mind for the purposes of managing given circumstances that is most easily applied when contextualizing how we grant actor status to an NBO. Our motives, goals, and options may affect a temporary shift in our perception of "thing," allowing it to become actor until these requisite contexts are no longer present. In explaining this phenomenon below, I apply Schutz's (1970) discussion of relevances and typification. I suggest that giving voice to an NBO is an extension of the thought process we use when we encounter problems with other humans with whom we interact. The likelihood and durability of this process is contextually driven and mirrors the intensity and durability of attention we pay our human interactional partners within those same contexts. This being the case, I would like to put forward that human beings not only produce and understand self through interaction with others but use an understanding of social interaction as a sort of thought template to refer to when attempting to solve other noninteractional challenges.

GRANTING ACTOR STATUS TO A NONBIOLOGIC OTHER

How and when a thing becomes “another” and is granted the status of actor is situationally bound. Obviously, our environments are populated by untold numbers of objects, most of which remain things to us. I do not try to interpret my toothbrush or ponder the meaning of the posture of a textbook. The idea that someone might do so seems ludicrous, yet we take other objects as actors, at least temporarily. Why does this process work for some things and not others? Moreover, there is a shared sense of which objects are “actor candidates.” Media images of a human user yelling at, or pleading with, a misbehaving computer are not uncommon. I suggest that there are several exigent circumstances that encourage us to shift our perception and enable us to enter into direct interaction with an NBO. These circumstances make such interaction, and the extra burden required of us, both understandable and worthwhile. Further, I believe that in paying greater attention to this perceptual shift, and the circumstances in which it tends to occur, we can gain greater insight into the nature of problem-solving work that we engage in daily.

Any discussion of human perception will necessarily deal with relevance, whether or not relevance is directly addressed. As Schutz (1970) points out, what a person considers attention-worthy depends on what is going on in the moment—objects that are relevant are generally only “relevant-at-present” because of what Schutz labels the “interest at hand” (p. 112). Perception is driven by our goals. When we have a goal in mind, we attend to those items or circumstances connected to it (intrinsic relevance). We also consider those items that are present along the way of our meeting a goal but that are imposed on us rather than chosen by us (imposed relevance). In the first example, we are considering potential tools; in the second, the measure of likely hurdles. Schutz takes his discussion of relevance still further and suggests that the only way an actor may attempt to understand and integrate an item or circumstance with imposed relevance is to transform “the relevances thus imposed into intrinsic relevances” (p. 114).

Consider this transformation in light of one of Schutz’s other important contributions, that of typification in daily life. Typification is the system of thought-short-hand by which we sort the items and experiences we encounter into preexisting bins of understanding. Thus I see a “dog,” I hear “arguing” outside my door, and so on. Our culture provides us with a codified, durable web of shared understandings. We append this system of preexisting typifications in light of biographical events. Through typification, we understand the shared meanings of our given circumstances and have a (partially) presuggested plan of action in our regular efforts to meet our various goals.

I suggest here that we understand NBOs as actors and engage them in interaction despite the impossibility of NBO mindedness, because of a shift in our perception related to the relevance of NBO action. Further, this shift runs along a counterintuitive track—that of anthropomorphism and engagement—when we are under sufficient duress in a given set of circumstances, because of our fallback

to typification on how to deal with a recalcitrant other in a problematic interaction. It is through the shift in perception that brings an NBO from thing to actor and highlights suddenly relevant action on the part of the object at hand, which allows for the transformation from imposed to intrinsic relevancy. I know how to act against another with whom I disagree (or so I tell myself), while I may be at a loss to comprehend what a machine is “doing wrong.”

Further, I typify this other’s actions in making this shift, allocating motive and mindedness where none can exist. This response is not irrational. To the contrary, if I am to believe I may have an effective response and take control of a tenuous situation within a certain combination of circumstances, I must conceptualize the event in such a way to allow understanding and purposive response. The circumstances in which this process occurs are as follows.

For an NBO to be an actor candidate, it must be capable of action that we can perceive as independent of direct human cause. Although people use toothbrushes, one would be considered a bit off if he or she were to engage in direct interaction with this tool, as it only “does” through human action. A personal computer, meanwhile, can shift rapidly from a relatively benign thing to an enemy to be outmaneuvered. An adaptation of Weigert’s (1997:34) concept of “trippers” is helpful here. Weigert defines trippers as “technological instruments for tripping environmental outcomes” and suggests that these devices allow humans to control technology without a full understanding of how it works (p. 34). A person does not need to have a degree in electrical engineering to make the lights come on at home. The same technology that allows the accomplishment of goals without understanding mechanical process works to obscure the nonmindedness of machine behavior. In the case of a personal computer, the user likely has enough knowledge to use the machine to achieve basic goals—he or she can type documents, surf the Internet, and send messages, for instance. This is use knowledge, not process knowledge. He or she knows how to “tell” the computer to do something, but not why these actions influence the outcome one way or another. It seems that the user is able to initiate actions (turn on programs, click on the “save” icon), but then he or she sits back and waits as the computer completes the action on its own.

This ability for the computer to “act back” in response to typed commands involves agency, certainly, but a given computer is not yet a villain. If all goes as planned and the document is saved, the computer remains a thing in use. However, when we feel threatened, or we are uncertain of being able to meet desired goals, we pay greater attention to and become more emotionally invested in the actions of the NBOs that are part of our task. If we perceive the threat to our desired goals to originate from the NBO or from external sources that may be avoided or mitigated by use of the object, we will be more likely to grant this object actor status. Threat encourages the human actor to maximize personal agency in response. Threat serves as a focus for perception; when my goals are threatened, I immediately inventory what resources I have at present that may help my cause. I also search for what effective means of response are within my control. For example, I once was

delayed for several hours on the interstate. A traffic accident caused the highway to be closed. I had to leave the highway well before my intended exit and try to navigate unfamiliar rural roads at three a.m. to get home. I checked my cell phone and discovered I had no signal. I had both need of that very object—no other cell phones were available—and great emotional investment in my goal of getting home safely. Before the signal came back, I had begged my phone to work once more, and then when that proved unsuccessful I had petitioned the signal tower, wherever it might be. If my use of a machine or other NBO becomes problematic, I can no longer trust that my behavior in the matter can control outcome and must therefore reframe the entire situation. Nothing I did seemed effective in getting the phone to work. For all practical purposes, I might as well not have had a phone with me on the drive. A tool is only so useful as its (foreseeable, planned) effectiveness.

If the outcome of human-initiated action performed by an NBO is unsatisfactory, it may seem to us that the thing is acting outside direct human control and contrary to explicit instructions. The NBO stops being a thing at this point, because the class of things within my typification system are to be used, and thereby controlled, by myself. A user may ask a computer to save a document, but if the computer deletes it instead, the machine did not “listen.” That the user may have accidentally deleted the document himself or herself, or that a programming error may have impeded the working of the machine, may not be part of a user’s reference in the moment of loss.

I may also perceive threat as coming from external circumstances. Such is the case when a person appeals to the protective or beneficent powers of a totemic object for help in times of trouble. At this point, the human actor may perceive the object as an actor or may engage in nonanthropomorphic normal interaction rather than interaction with another by using the object as a thing or withdrawing from any contact with the object. The decision will involve two factors: *the urgency of human goals and the primacy of this specific object for the completion of the human task*. Interaction is work, and doing mind for the other party in interaction only adds to the work to be done. This is an inanimate object, not an other that an actor cares about, which makes maintaining distance while doing mind all the more difficult. For this amount of work involved to make practical sense to a person, he or she has to be convinced that the time and effort are justified under the context at hand. Thus the impetus to perform the work of doing mind must come from emotional investment in accomplishing goals, since the emotional component is not located in the object itself. For instance, the blue error-message screen that sometimes results when computer action does not match user request suggests “reboot or give up” (i.e., re-“normalize” or terminate the interaction) while a user is downloading a recipe from the Internet. The response to this error message will likely differ from that when the error message appears during the final draft of a user’s unsaved presentation.

We are more likely to project when we feel that a task we consider important is threatened. People engaged in problem-solving behavior tend to measure their own efforts and circumstances against the actions, efforts, and motivations of those who

stand in the way of goals. When we combine relevance with goal importance, our propensity to focus on and interact with NBOs becomes more understandable. We assign that which is immediate to the task at hand, and ostensibly at least partly within our control, to the domain of "primary relevance," which commands immediate and focused attention (see Schutz 1970:112). It suddenly makes sense to expend significant time and energy questioning what has happened, why the object has behaved in contrary ways, and what can we do to rectify the matter. Further, we typify our interactions with objects along the lines of other more familiar interactions (generally between one person and one or more human others) and engage in the same problem-solving search for motive, goal, and likely next action of the other involved.

A final component of this projection process involves temporal immediacy and object primacy. *We are less likely to grant actor status to objects that are replaceable or unnecessary to our goals. If we do not require that object, at that moment, then the work of doing mind is neither necessary nor perceptually reasonable.* A user may require a computer to continue work on a document. If he or she has the document saved to disk, any computer that will accept the disk will suffice. The user may simply transfer the document to a different machine. This new set of circumstances assumes that there is sufficient time for this task and access to an alternative object. Whether we are willing to engage with a machine that has already proved unsatisfactory depends on how easily we can replace it as agentic object. Can we replace the object without incurring a loss of effectiveness, and how much work will it take to find a replacement? We are more likely to project if no similar object is available (i.e., one's only car has broken down), especially when we are in a hurry (on the way to a job interview).

CONCLUSION

People constantly interact with objects. Whether the form of this interaction becomes direct or involves a sense of interacting with another rather than simply an other depends heavily on the context at hand. The key criteria necessary for this perceptual shift seem to be emotional investment and the (perceived) threatened interruption of human goals.

All interaction is work. In any given set of circumstances, we are performing an intricate dance of interpretation, projection, and evaluation as best we are able within the context at hand. Expanding our perceptual field to include NBOs as actors, therefore, represents the taking on of extra work for ourselves. Unless the circumstances are exigent, this shift will not occur. Since we are far less likely to develop emotional attachments to an NBO than to a nonlingual biologic other, there is little if any emotional return we can gain from providing the mind necessary to interact with any given thing. Instead, the emotional investment required to justify doing mind is one step removed. We grant an NBO actor status because in the moment it is a unique individual component necessary for completing a task important to us.

If we understand the work we do when interacting with NBOs as reasoned problem-solving work, we gain greater insight both into the seemingly foolish or nonsensical behavior of addressing and interacting with things as though they can interact back, and into the depth and durability of typification in interaction. We interact with NBOs not because we are foolish or irrational but because we draw on a store of knowledge about problem-solving. This is a case of misapplied typification; what works with problem-solving, when dealing with another agent, does not make sense when interacting with an NBO, even if this object seems to have a mind of its own. Still, we assume interpenetrative thought when in interaction. I know that I am trying to guess your motives and likely responses, and expect that you are doing the same with me. Thus, when we apply this stock of knowledge to interaction with an NBO, we must do mind for the object if interaction as previously understood can occur.

In essence, this process brings a seminal tenet of pragmatism into the computer age: we behave in ways that are practically reasonable. Symbolic interaction takes this stance still further and asserts that all objects are social objects that we constantly define and redefine according to our needs (see Blumer 1969). Under certain circumstances, I have argued, it becomes practical and necessary to behave toward NBOs as though they are actors in a given scenario. In this manner, we take the role of the other with an object that seems to threaten our desired goals. We have to mentally make an object into an other in order for this process to occur. Mead (1934) argues that interaction requires this process—we must try to stand in the other's position if we are to choose our actions and words effectively. We literally *cannot* interact, in a minded sense, without projection. The counterintuitive and seemingly nonsensical process of making NBOs into actors with whom we can converse, argue, or cajole suggests that such projection is an innate and critical response. I believe that projection of the other is a template, part of the *structure* of problem-solving thought, and as such it is triggered when a given set of circumstances suggesting necessity occurs.

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