Death of the User: Reconceptualizing Subjects, Objects, and Their Relations

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The article explains why the concept of the user in Library and Information Science (LIS) user studies and information seeking behavior is theoretically inadequate and it proposes a reconceptualization of subjects, objects, and their relations according to a model of 'double mediation.' Formal causation (affordances) is suggested as a substitute for mechanistic causation. The notion of 'affective causation' is introduced. The works of several psychoanalysts and continental and Anglo-American philosophers are used as tools to develop the model.

Introduction

In 2005, I organized a conference panel at the annual meeting of the American Society for Information Science and Technology (with Leah Lievrouw, Elisabeth Davenport, and Howard Rosenbaum) entitled "Death of the User." A year later, in response, an ASIST panel organized by the Society's special interest group in user studies declared that the user is not dead. In this article I would like to explain why the concept of the 'user' as used in Library and Information Science (LIS) is inadequate for describing agency and the relationship between subjects and objects and I would like to propose a different model.

My critique will begin with a necessarily succinct explanation of the limitations of the traditional manner of understanding human beings and information objects in the user studies tradition of LIS. (In this article the concept of the LIS user tradition includes information seeking behavior research in LIS.) Then, in contrast to understanding subjects and meaningful objects in terms of a mechanistic causality, that is, in terms of determinative causes and effects, I would like to argue for the importance of viewing subjects and meaningful objects as *co-determined* by social, cultural, and physical affordances and *co-emergent* out of those relationships through expressive powers mediated by mutual affects.

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This article begins with a brief overview of the information user tradition as proposed in Nicholas Belkin's Anomalous States of Knowledge (ASK) model. It then critiques the concept of need in ASK through the Lacanian concept of lack and it remaps the subject from the user tradition's ego psychology onto Jacques Lacan's particular type of object relations theory, namely, one of mediation by cultural forms (Lacan's "symbolic order") in social situations. Then the article shifts perspective and looks at the object as a 'quasi-object,' understood according to the two ways this term is used: more generally in reference to semantically meaningful objects and, more specifically, as socially constructed tokens. Last, the article then develops a notion of interbody affects through Gilles Deleuze and Félix Guattari's concepts of bodies and their "becomings" in order to develop a notion of temporal, and not just contextual mediation. Throughout the article the distinction between mechanistic and formal causation is kept and a concept of contextual (sometimes called 'structural') social, cultural, and physical affordances is argued for.

The 'take-away' from this argument is that subjects and meaningful objects in LIS need to be explained in terms of their a priori sociocultural structurations, as well as their interbody affects. Mechanistic cause–effect models borrowed from the physical sciences are not applicable in describing meaningful events involving human beings. In contrast, formal causation—in the sense of affordances—offers us a theoretical tool for helping understand both orderly behavior and the radicality of bodies in their choice and implementation of affects.

The phrase 'death of the user' in the title of this paper refers to what could be seen to be the theoretical and institutional end of a certain understanding of human beings and their activities as either determinative causes of, or effects from, 'generating' or 'using' information. This article also suggests a certain corresponding 'death of objects' (and the importance of the concept of 'quasi-objects') when we are examining meaningful objects studied in the social sciences and humanities, which are inscribed, too, within nets of social norms and cultural forms. "Death of the user" refers to the end of ego psychology as the foundation for understanding

human beings in LIS research and also to the end of ego psychology's understanding of objects as subordinate to personal will and representation.

Finally, the method of this article requires explanation. One charge against it may be that the article involves intellectual *bricolage*. This is true. Beginning with the concept of need in Belkin's ASK model, I invert the LIS models of mind (ego-psychology and cognitivism) that I find this concept embedded within and thus displace the concept of need into a contrasting (radical French psychoanalytical) psychological tradition's conceptualization of subjectivity and objects (a type of object-relations theory). Then I discuss the object as a "quasi-object." And last I return to a still more radical version of the French psychoanalytical subject in order to address interbody affects. What I am doing here is starting from a core psychological concept in the established LIS literature and rereading this according to alternative traditions that have in common a base epistemology of social and cultural construction, on the one hand, and "powerful particulars" (Harré and Madden, 1975)—a sort of existential subjectivity when applied to human beings—on the other. The *bricolage* consists of a remapping and reconstruction of subjectivity according to the traditions and the conceptual toolboxes of alternative mid- and late-20th century psychological traditions than those of ego-psychology and cognitivism. There is, of course, a certain amount of intellectual history that allows for these various mappings and remapping of concepts, which falls outside the domain of this largely epistemologically oriented article. I have added a few brief explanations where this *bricolage* becomes most noticeable, although I recognize, too, that the initial project of such a critical remapping may be rejected by some readers. However, it is the goal here to sketch possible rereadings of subject–object relationships by the innovative use of conceptual tools that appeared and still appear in overlapping intellectual projects and histories revolving around shared problematics—most largely, the psychological subject and its relationship to meaningful objects.

I should add that one could envision this very general epistemological model itself being challenged, though, from other sources in LIS than user studies (e.g., possibly a neo-documentalist tradition—say, a certain reading of Frohmann, 2004) or outside of such (for example, a Heideggerian critique of psychologism and the place of subject-oriented studies within this). The engagement with such possible critiques, however, lies outside of this article.

Remarks Regarding Ontological Models and the Term 'Mediation' as Used in This Article

Several introductory remarks need to be made here regarding the ontological understandings of bodies and their relations presented in this article.

The ontological model in this article postulates: (1) bodies with intrinsic powers as a result of ontological constitution, historical changes, and social-cultural development; (2) zones of mutual affects between bodies—what in some areas of continental philosophy in recent years has been termed the 'in-between'; and (3) the expression and emergence of bodies, particularly subjects, as *singularities*, and then only later—through the overlay of representational categories of recognition and even classification—their being named as *identities*.[1]

Next, Katpelinin and Nardi (2006) and Ekbia (2009) have used the term "mediation" to characterize some aspects of structural affordances and mutual affects, but the use of this term has two possible limitations. First, the term may fail to distinguish clearly enough between sociocultural materials as affordances for bodies and their expression, and, intersubjective (or more broadly interbody) affects. Second, at least in terms of Human—Computer Interaction (HCI), the term may suggest, as Katpelinin and Nardi argue (2006), "asymmetrical" relations between subjects and objects in that the mediation that HCI deals with begins with the subjects' "needs" and the subject's use of sociocultural objects as tools. In this article, I will stress that these tools are meaningful objects and therefore, together with subjects, that they are socially–culturally mediated.

Thus, this article understands subjects and objects as bodies that are mediated in two senses—a 'double mediation': that of contextual (or 'structural') formal causes or affordances (social, cultural, and physical) and that of interbody affects. Together, these two 'axes' locate bodies and their potential becomings within situations.

Information Seekers and Users: The Problem of Appropriate Causal Models

The goal of LIS studies of 'user' and 'information seeking' behavior might be taken to be the causal explanation of observed regularities. This should not be surprising since such studies seek to be a 'science' (in the modern, English language sense of the term). Neither observation alone (journalism) nor the numerical representation of such in itself constitutes 'science.' Such science involves not just the observation of enigmatic regularities, but it must explain such causally (Harré & Secord, 1972). But, LIS user studies, and particularly in this, information seeking behavior studies—when they do go beyond mere observation or the study of banal events (and many don't)—often have a curious understanding of causality. Sometimes they understand causality in the sense of determinate causes—what has been called 'mechanistic causation' or in English translations of Aristotle what is termed 'efficient causation.' Other times, they understand causality in the manner of what in English translations of Aristotle are termed "formal causes" (or more recently, as in Harré's works [after Gibson] "affordances"). And in LIS we often encounter what appears to be a confused mixture of the two types of causation, particularly in information seeking studies where ethnographic methods make claims for mechanistic causation between user types and information types. Further, 'mixed methods' have become popular, although sometimes such an approach seems to be an attempt to compensate for mismatches between epistemological

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assumptions and methodological choices, as well as for, simply, poorly chosen topics.

As to earlier and still current user studies, mechanistic causation is found in Belkin's ASK and subsequent like models where the causes of information found in documents are located in human beings acting as creators, and—more important for the information retrieval situation—where documents as sources of information are seen as causes of changes in "knowledge structures" for information users (Belkin, 1977, 1990). Theoretical models in sciences often can be traced to borrowings from other sciences and from popular tropes and folk beliefs. What possibly lies behind the ASK model is the conduit metaphor for communication, which has influenced information science through a communicative interpretation of Shannon's information theory (Reddy, 1993; Day, 2000). The conduit metaphor for communication and information posits a causal generator and an effected mental receiver. The products of the mental effects are seen in changed behavior (Weaver, 1949).

From the root discipline for its application, classical physics, mechanistic causation describes one body's determinative effects upon another body so that a first body is understood as a causal force for a second body's change of state. Whereas empirical experimentation in some sciences may seek direct observation of causal relationships, the psychological tradition—outside of psychobiology perhaps—looks for secondary effects of postulated primary changes in establishing causal relations: namely, changes in behaviors as evidence of changes in mental states.

Among other conceptual problems, mechanistic causation as suggested in the conduit metaphor leads, particularly, to a confusion between *affects* and *effects* (see, for example, Weaver's (1949) confusion of a dancer's affects with communicative effects) and it leads, more generally, to viewing human expressions and their understandings in terms of determinative causes and effects. In Belkin's ASK model the information user or seeker is understood as seeking the effect of 'information' in response to a cognitive "need" so as to correct an "anomalous state of knowledge" existing in the mind of the information user or seeker. Kuhlthau (1991), after Belkin, reads in this anomalous state a literal psychological feeling of anxiety and instability.[2]

In summation, the LIS user tradition's base model has two major problems. First, it is a form of the conduit metaphor, which is a folk-model of communication that has long ago been dismissed as an inappropriate model for human communication and understanding. Human language does not function in the manner of signals sent from a transmission device to a receiving device nor is understanding achieved statistically. David Blair's appeal to Wittgenstein's notion of language as tools and tokens is a much more fruitful model for viewing communication and 'information exchange' (Blair, 2006).

The second problem is the centrality of mechanistic causality for explaining human communication and 'information.' Expressions are not determinative causal forces for behavior. Expressions are meaningful because they are formal tools for doing things, but as tools for doing things they can be understood or misunderstood and used normatively or in innovative fashions. If a form of causality is sought for understanding expressions, we must turn not to mechanistic causation, but to what Aristotle termed "formal causes." To understand an expression is to participate in the use of language or other semantic tools as forms for doing things. Information seeking behavior uses ethnographic methods, but often maps onto this a mechanistic causal model in order to arrive at notions of types of users.[3]

In conclusion, the user and information seeking traditions in LIS have serious epistemological and methodological problems that make their characterization of human beings as consistent types—'users' and types of users—as deeply problematic as the characterization of their objects as 'information' (see Frohmann, 2004, Chapter 2). In addition, theory in these LIS studies tends to be 'homegrown,' while more sophisticated models can be found outside of the core LIS disciplinary literature (for example, in HCI) with little acknowledgment in the core literature. Statements such as "context matters" and "the social is everywhere," as this author has heard in national conference presentations by leaders in LIS's user research community fail to approach the granularity that is needed in order to understand subjects and objects as social, physical, and cultural materials, either in static or historical relationships.[4]

Formal Causes or "Affordances"

If not by mechanistic causation, then how shall we study and discuss regularities involving human beings and meaningful objects? This article suggests the epistemology of ontological powers and formal causes or affordances. The work of the philosopher of science and psychology Rom Harré offers an oeuvre of advocating a theory of "powerful particulars" acting through contextual affordances. Such particulars exist in the physical as well as the sociocultural realms, although the ontological conditions and types of affordances allowed purely physical and allowed sociocultural bodies differ.[5]

Harré's work in psychology is influenced by Lev Vygotsky's social and cultural constructivist and developmental understand of mind and James J. Gibson's concept of affordances, as well as by Wittgenstein's investigations of rule following, particularly involving language. In Harré's work, Gibson's concept of affordances is broadened and deepened so as to consist of social, cultural, and physical affordances. As mentioned earlier, these affordances are understood in the sense of Aristotle's concept of 'formal causes,' that is, as forms that allow something to be expressed and emerge in certain ways. In the presence of certain affordances rather than others certain powers are actualized as events, are preserved or suppressed, and they may evolve into further potentialities for agency. Human beings, as intentional powers to express and do things and to emerge as identities from the potentialities and actualizations of those actions, are understood as afforded by social, cultural, and physical materials.

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These three formal causes or affordances are *co-determinate* with one another for expression and emergence, in different degrees of subordination or dependence upon one another, depending on the event. So, for example, speech makes use of the physical affordances of the mouth and such movements become meaningful sounds through the cultural affordances of language, which then are socially significant in specific social situations. Meaningful acts occur through cultural forms and take place in social situations (which may be group experienced or experienced alone), and through different types of physical affordances to do this. Cultural, social, and physical affordances act as 'materials'—in the sense that they have possibilities and limits inherent to them. The mouth can only move in certain manners, the words can only be said in certain ways if they are to be understood, and statements carry certain types of semantic meaning and sense by being products of sociocultural language games (although, again, each of these 'limits' are also affordances for specific powers). Again, the term 'materiality' refers to the possibilities and resistances of specific social, cultural, and physical forms for enabling or restricting powers.

There are three advantages to describing causation formally. First, there is much less temptation than with mechanistic causation to attempt to follow a causal chain back to an illusionary initial cause (today, as in much of modern science, the temptation is to reduce social and cultural causes to a physical cause). Along with this is the ability in working with formal causes to describe single actions in terms of non-chained multiple causes of the three types of affordances (e.g., meaningful speech as co-determined by mouth movements, cultural forms of spoken language, and social norms). Last, causes are described as that which allows or "affords" *affects*, rather than as a force that necessarily determines *effects*.

The substitution of mechanistic causation with formal causation in the mode of affordances is quite desirable, particularly in the social sciences, where it allows human beings to be understood as agents with choice who act within contexts and situations and who express themselves and emerge through learned and developed tools and abilities. In distinction from mechanistic systems where causal relations are largely or exclusively products of design, humans in their meaningful acts are products of experience. While there may be sufficient affordances for human actions, there are only in very limited cases necessary mechanistic causes for meaningful human actions. The use of a gun in a murder may be a sufficient affordance to carry out the murder, but it is often not the necessary cause for the murder, even in the sense of being a physical affordance. The murderer may choose not to use a gun, but rather, to use another weapon. And ultimately, it is the contingency of social, cultural, and physical affordances, brought together in a specific person in a situation, which—or rather who—is the necessary 'cause' for the murder.[6]

As Harré's works have argued, the notion of powers and affordances is used throughout the physical sciences. So, for example, vinegar when mixed with baking soda 'expresses' carbon dioxide as the powers of their potential properties are afforded actualization in their physical mixture. The concept of powers and affordances is familiar in chemistry, where chemical *x* exhibits some qualities in the presence of chemical *y*, given the additional affordances of appropriate environmental situations. Harré's works have extended this notion of powers and affordances into psychology as well, thus arguing that normative social situations and cultural forms act as affordances for meaningful expressions (see, for example, Harré & Secord, 1972).[7]

All beings and things have certain powers, receptivity, and resistances to be affected and to affect in relation to other beings and things, depending on their ontological properties and how this is shaped by experience. It is on the basis of human beings as 'powerful particulars'—expressive and emergent through their own powers, as they are actualized, reinforced, and established by contextual affordances—that we must begin any study of human agency (Harré & Secord, 1972; Harré & Madden, 1975), as well as of meaningful objects.

Subjects

How are we to better understand *subjects as human beings*? In the past two centuries psychology has emerged as the dominant area involved in the conceptual modeling of *human beings as subjects*, using models of subjectivity that are often heavily borrowed from the Western metaphysical tradition and from folk psychology.

In the following section I would like to begin with an inversion of the subject–object relationship with regard to the concept of need in Belkin's ASK model. This will allow us to begin opening subjectivity to the personhood of being human. For this, I will utilize Jacques Lacan's critique of desire and need in terms of lack and his concept of the "symbolic order" as the background against which desire and need are composed and form the subject. The notion of the "symbolic order," as I will suggest, can be fleshed out in terms of sociocultural affordances, as we have previously discussed. Then I will turn to the problem of the object, and last in this article, I will develop a notion of interbody affects situated within these structures.

The Psychoanalytic Subject

How can a psychoanalytic conception of the subject help us to reconceptualize the relation of subjects and objects, at least in so far as subjects are understood as human beings, and particularly as persons?[8] At first glance, the question seems paradoxical; after all, aren't psychological subjects persons? Perhaps. But within the traditional communicative-causal models that we have discussed above human beings—*qua* users—are understood as subject-types in relation to object-types; the relation to personhood here is analytically difficult. There is a greater need to add the ability to make expressive choices to this subject and, also, to provide a finer grained understanding of how the subject is conditioned to choose as a singular cultural, social, and material being.

The psychoanalytic subject is discussed in this section not in a clinical or an experimental psychological context,

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but rather as a sociocultural entity. It is not at all the intention of this section or this article to propose psychoanalysis as a new 'approach' for empirical analysis, but rather, to examine the construction of the subject within psychoanalysis, particularly, Lacanian psychoanalysis, as a bridge between the LIS user model—based on need—and a fuller and more precise theoretical, sociocultural model.

The Lacanian Subject[9]

The psychoanalytic concept of the subject that is important to us is that which is discussed in object-relations theory. In contrast to ego psychology, object relations theory in psychoanalysis understands the psychological subject as constituted by its relation to objects.

These relations can be of many kinds, although they are commonly understood in psychoanalysis in terms of its theory of drives (*Trieb*). The history of the term "drive" (*Trieb*) is very rich in the century or more of German philosophy preceding Freud, namely, in the works of German Idealists such as Fichte, Schelling, Schlegel, and Hegel. Where the German Idealist understanding of drives becomes even more pronounced than even Freud's own works, however, is in the French psychoanalytic reinterpretation of Freud, particularly in the works of Jacques Lacan where Freud's biological reductionist tendencies are thrown off and where the drives are understood as functions of an overarching primary drive, namely, that of "desire."[10]

Drive theory in psychoanalysis proposes that the subject is to be understood in terms of 'psychic energy' emanating from the subject and attaching or 'cathexizing' itself to an object.[11] The exact character of cathexis varies in Freud's works, sometimes being understood as identification, other times, as the desire to possess or use something and, often, both. In the work of Melanie Klein and others after, the particular parts of the body that are object-cathected are termed "part-objects." With part-objects the whole of the object is understood in terms of a symbolically invested part (in the psychoanalytic framework, erotically charged). The significance here is that a symbolic part can stand for and overshadow the entire real object.

Lacan's works place particular emphasis on the importance of part-objects in the subject's life. In Lacanian theory, while maturing the child more actively appropriates the symbolic 'linguistic net' over reality that he or she has been given and is inscribed within, having failed at an earlier childhood stage (the "mirror stage" which is characterized by Lacan's "imaginary order") to capture objects and other persons as images of him/herself. While there is no clear point at which the imaginary order and the symbolic order diverge from one another (they overlap and continue to do so throughout life), the need for language in order for the subject to capture the reality of the object for his or her own desire is symbolized by the child's identity with the adult who represents the sociocultural 'law' of the symbolic. While the imaginary contains manipulative objects for the child, the law represents the Other. For Lacan, the law is, fundamentally, the fact of language as a public, and not a personal, phenomenon. (And so the subject, as positioned in this, can never be a fully private mind, and thus, is said to be "split.")

The key to understanding Lacan's innovation upon the orthodox psychoanalytic theory of drives and object-cathexis is his understanding that the symbolic cannot be a 'private language.' In Lacan's works, language comes from "the Other" (*Autre*). Here, the capital letter signifies an otherness or alterity that lies outside and prior to the subject and prior to the narcissistic manner by which the other person (the 'little other' (*autre*) in Lacan's work) is understood in the subject's imaginary order and the mirror stage (i.e., as a reflection of the ego). Essentially, what Lacan accomplishes is to further develop those elements of Freudian psychoanalysis that understand the ego as a result of historically specific social forces and cultural forms, and he does so by viewing language, or more generally, "the symbolic" as the constructive medium for the developmental formation of self and person.

The crucial question is what is the relation of the part-object to the symbolic order as a whole? In the imaginary order of Lacan's mirror stage the part-object is simply a projection of the subject's ego, but in the symbolic order the constitution of the part-object is more complicated, since the composition of the symbolic order precedes and exceeds any particular ego. The upshot of this is that, from the aspect of the symbolic order, the subject's desire is given to him or her in the form of language, which the subject 'possesses' only in partial terms and whose 'completion' depends on the never fully achievable fit of the subject's desire with the sociocultural domain of language from which it emanates. In terms of needs—which are understood as more particular events of this general desire—the part-object plays the role of constituting both an achievable object or objective, while also marking the unachievable end of the subject's desire to 'have,' and thus to transcend, the Other in general, namely, the symbolic.

In brief, in Lacanian theory the part-object is a lack to the subject's desire. Lack is a condition of the subject's place in language, from which both the subject's desire and the subject's particular needs appear. Unlike need in Belkin's ASK model, need in Lacan's work does not belong to a subject's cognitive state, but rather, it belongs to the condition of the subject in a symbolic order. And unlike Dervin's work, "sense making" is not a private affair, but rather, it is a pragmatic activity of social and cultural positioning. And unlike both Belkin's ASK model and Dervin's notion of a "gap," in Lacan's work the subject can never move beyond an ontologically generalized "anomalous states of knowledge" or "gap" because lack is the condition of the subject's desire itself. In IR terms, this is to suggest that the dream of a perfect retrieval device is impossible to achieve. The subject and the object do not correspond to one another other than in pragmatic instances of stabilized language use, which marks not a subject–object correspondence in a positivist sense, but rather, the subject's self-positioning in relation to the object, as both are located within social norms and cultural forms, and as we shall discuss, within the material openings and

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closures of each to the other's expressive powers. In terms of communication, understanding must be understood not in terms of a correspondence of content, but rather in terms of a negotiation among possible meanings within the constraints and affordances of cultural forms and social norms.

In sum, the subject attempts to orient (i.e., position) him or herself within cultural forms and social norms. Language, like other meaningful objects, constitutes—to use Deleuze and Guattari's further refinement of the Lacanian concept of part-objects—the "entranceways and exits" (Deleuze and Guattari, 1987, p. 17) for the subject's expression and emergence—that is, for the subject's 'desire.'

The Subject's Positioning

The limitation of the Lacanian model and of psychoanalysis in general is that it fails to flesh out the notion of the "symbolic order." As a type of 'discursive psychology,' however, this symbolic order may be understood as composed of the three types of affordances that we have mentioned in our discussion previously. Cultural forms and social norms (found, of course, in the form of physical affordances as well) constitute the affordances of the symbolic order. Expression and emergence pass through these affordances in order to be meaningful.

The interest of Lacanian psychoanalysis is in the pragmatically useful positioning of the subject within the symbolic order—that is, within cultural forms and the social norms for their use. Such is also the issue for "positioning theory," as a theory within discursive psychology (Harré & Langenhove, 1999; Given, 2005). In order to understand this issue more fully, however, we must distinguish between selves and persons, since these constitute two different aspects of human beings as intentional agents or subjects. The problem of positioning really involves the positioning of one's self as a person—that is, as a human being among other human beings according to symbolic orders. But, this does not exhaust the notion of a human being or any other subjective agent, because subjectivity involves intentions and intentions are not only possibilities that are realized, but also potentialities that are actualized. To the former belong persons and social psychology, but to the latter belongs the self as a term of personal psychology. Because, using Harré's terminology (Harré, 1984, 1989), human beings are both "persons" and "selves," they can both position themselves within symbolic orders and also add to the reinvention of such orders.

In order to have a more complete analysis of the subject as a person we will turn to a brief analysis of Harré's conception of selves and persons and, also, as a complementary set of terms we will examine after Deleuze and Guattari the concepts of 'singularities' and 'individuals.'

Selves and Persons, and Singularities and Individuals

Harré's writings on the agency of the self is extensive (two exemplars being Harré, 1984, 1989). There are two points that stand out in his analysis: first, that selves can be understood in terms of being agents who have hypothetical potentials for actions. Second, persons (in a specialized sense), in contrast to selves, can be understood as recognized agents from the viewpoint of others (including our thinking of ourselves as others might think of us). From the viewpoint of the self, my actions are often seen as a situated choice among potential powers of action or expression, but when we view others, our tendency is to see others in terms of choices made out of logical possibilities, that is, to see their expressions in terms of intentionally chosen determinate causes and effects. Maturation partly involves learning how to see ourselves as others see us and learning how to view others as we see ourselves. Learning how to see ourselves as others see us involves learning to see ourselves according to social roles and rules—what Harré terms "moral orders" (1984). Such norms shape the everyday recognition of responsibilities and responsible action. And on the other hand, learning to see others as we see ourselves involves learning to see others as hypothesized potentials for actions.

In delineating the understanding of persons according to moral orders, Harré takes up Goffman's dramaturgical viewpoint in the mode of 'positioning theory.' Normatively, agents are seen as responsible persons in so far as they are understood to more or less fit within the rules and roles of accepted moral orders and their freedom and responsibilities are often expected to increase in the hierarchies of these orders as they meet the expectations of earlier levels. Such is often viewed as constituting social and personal maturation and advancement.

We might add here that the works of Gilles Deleuze and Félix Guattari add a less normative ingredient to such a conception of selves and persons.[12] Deleuze and Guattari's coauthored works and Deleuze's single-authored works also involve an expressionist and emergence philosophy, which in their larger characteristics are not so dissimilar to Harré's core epistemology.

Deleuze and Guattari understand individuality according to two ontological types. The first ontological type is that of evolving selves who display unities of traits at given moments. These unities are dependent on local conditions for emergence. To this type they give the term "singularities," a term taken from the study of chaotic systems, where, for example, a wave achieves singularity as a function of its powers expressed within the context of physical affordances and the pull of environmental 'strange attractors.' The second ontological type is that of identities, which are recognized individuals according to norms or 'representations' for understanding. So, for example, a person exhibits a singularity of traits as a function of innate and external powers, but these traits may then be further recognized and represented within moral assumptions of who the person 'really is' or according to ethnic or gender identities of being, etc. Here, 'identity' is understood in terms of categories of representation that are never adequate to the person's emergence as a singularity. In contrast to representational identities, singular emergences may be understood as enigmas or may go unrepresented, although not unperceived. Represented identities,

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however, are individuals that are recognized according to previous categories for understanding. Not surprisingly, given that our moral understanding of others tends to be in terms of rules and roles and mechanistic causal interpretations of actions, and not in terms of potentialities and judgment, the term “individual” is often assigned in English to persons understood in the sense of representational identities. A more complete understanding would view persons as types of subjects who have potentials and not just logical possibilities. Subjects—whether they are adults or children or even ‘animals’—are those things that have potentiality for actualization, and not just possibilities for realization. Their actions (which result in events) occur in situations composed of the subject’s responses using past experiences, their multiplicities of knowledge and other abilities, and the affects of contextual affordances and the expressive powers of other bodies.[13]

Together with object relations theory we now have presented two related descriptions for understanding human behavior with regard to meaningful objects: first, that pertaining to the understanding of the subject’s personal intentions within social and cultural “symbolic” spaces, and second, that pertaining to cultural forms and social rules and roles in situations as conditions for expressions and emergence, understood in terms of formal causes or affordances. In both psychoanalysis and discursive psychology more generally understood we are presented with analyses that examine subjects and objects as conjoined entities via common affordances and common powers, not the least being language and discourse. According to both psychological frameworks, ‘information seeking’ might be seen as assortments of pragmatic issues involving the expression and emergence of personal intentions and abilities in sociocultural situations that involve grammatical categories of materials known as ‘information.’

With Frohmann (2004), I will agree that there is no, and there need not be any, common essence to these varieties of materials, since the term ‘information’ refers not to a real entity, but rather, it is a nominal entity. That is to say, what is ‘information’ are those things that we term ‘information.’ Information does not exist independently of the grammars of the term, and today the grammars of this term are extremely diverse. (Although a plurality of *meanings* sometimes gives way in discourses to a common *sense* of the term—for example, information as a thing, as stimuli, etc.—via metaphors and other rhetorical and discursive devices.)

Quasi-Objects

In both Lacanian psychoanalysis and in discursive psychology the object is understood as meaningful for the working out of human intentions. The object is not just a ‘mere thing,’ but it is something through which the subject ‘becomes’—i.e., it is meaningful for the subject. Consequently, this suggests, as well, that both the subject and the meaningful object are expressive and emergent through sociocultural affordances.

In Michel Serres and Bruno Latour’s works, the term “quasi-object” is used to describe semantically constituted objects. The term is not without problems, however, as it seems to have at least two related senses. The first is to describe semantically constituted objects as distinct from strictly empirical objects—a distinction itself that Latour’s work sometimes seems to problematize. The second sense of the term is that of describing the roles of specific nonlinguistic semantic tokens in forming groups or communities when they are passed around and shared.

The first sense is in part an inheritance from the tradition of social constructivism, which activity theory, discursive psychology, and to some extent, psychoanalysis take part in. Subject–object relationships in this tradition are understood as mediated by social norms and cultural forms. The second sense is an extension of the first sense, although the term “quasi-object” in this sense refers to specific types of meaningful objects, namely, those that play a role in community formation (i.e., group psychology).

Serres’ description of the formation and role of quasi-objects in group psychology occurs in his book *The Parasite* through the example of the Victorian children’s game of “hunt-the-slipper or button, who’s got the button [*furet*]” (Serres, 225). In its variety of forms through the years the game generally consists in the passing around of an object among a circle of participants with one participant being recognized as ending up in possession of the object. The object that is passed acts as a token that constitutes the group around a meaningful object, but the object, on the other hand, is recognized as specifically meaningful because it has been recognized as such by the group in their handling of it.

The game is important from four aspects: first, the passing of the object is constitutive of both the subjects and the object as sociocultural meaningful entities. Second, the subjects and the object are constituted or reconstituted as meaningful entities *through* their social circulation. Both the subjects and the objects gain their meaning by an activity that changes the meaning of the subjects and objects (the subjects becoming part of a group through the object, and the object becoming socially and culturally meaningful through or for that group). Third, as part of this game both the subject and the objects become understood as recognizable identities—not just a slipper to be worn, but a game token; not just a one child, but a player in a group. As some authors have put it, quasi-objects are bound up with the ontology of “quasi-subjects” (Brown and Lightfoot, 1999; Ekbia, 2009).

Last, the game is analogical to what Wittgenstein in his *Philosophical Investigations* referred to as “language games.” Such games: (1) constitute the meaning of the tokens (words, sentences, statements) that are passed around and these games are constituted as norms by these tokens being passed; (2) the games constitute the group meaning of the subjects that participate in the group dynamics, who, then, like the object-tokens, reinforce the norms of the game; and (3) the relation of subjects and objects as meaningful entities are mediated by the rules and roles of the game. As per the Wittgensteinian understanding of rules, the rules and roles

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of the subjects and objects and the rules for their interaction are constituted by practice in conjunction with the ontological powers and limits of the entities. Past and present affordances help shape these ontological powers and limits in various ways and degrees.

That actions can be simultaneously constituted by and constitutive of subjects and objects tells us something very important about subject–object relations and the nature of 'activity' in activity theory. It tells us that such relations are first of all 'mediated' by sociocultural norms that activities rely upon and often reinforce. 'Mediation,' in the sense of the use of tools for the performance of actions must take account of the social and cultural formation of such tools as themselves meaningful objects. Because they are prestructured as co-determinate entities, subjects and objects can 'use' each other.[14]

Interbody Affects

We have seen that quasi-objects and, indeed, through our earlier analysis, 'quasi-subjects,' as well, are constituted by mediated/mediating relations based on constitutive norms for sociocultural actions and values, which result in expressions and emergences. We have suggested that recognized subjects and objects emerge out of these relations as singularities and identities. Can we arrive at a more detailed analysis of these mediations in terms of 'interbody' affects?

We now turn to the French inheritors of the Lacanian concept of the part-object, Gilles Deleuze and Félix Guattari, a philosopher and psychoanalyst, respectively. Deleuze and Guattari even further radicalized the concept of the part-object, arguing against the reductive framework of the psychoanalytic Oedipal triangle and the understanding of part-objects tied to this in Klein's work (Deleuze and Guattari, 1977). They developed a philosophy of expression and emergence based on a notion of "planes" or "strata" of social, cultural, and physical affordances and on a philosophy of expression, emergence, and "affects" (Deleuze and Guattari, 1987). While the work of Deleuze and Guattari is sometimes derided in self-consciously 'scientific' literatures by a polemical use of the term, 'postmodernism' (a term that Deleuze rejected) their work—as conceptually and rhetorically difficult as it sometimes is—is also descriptively rich and conceptually innovative for an analysis of interbody relations in terms of affects.

In Deleuze and Guattari's works (foremost Deleuze and Guattari, 1977, 1987) entities or "bodies" are described as interacting with one another according to their openings and closures to the "affects" of other bodies (i.e., forces that are not necessarily causal determinates of effects, but rather, forces that are sufficient for shaping the forms and functions of another body).[15] These openings and closures to affects are historically formed and collectively they help form singular characteristics of bodies. Entities connect or not within in-between zones where they open or close to one another according to their speeds, intensities, and rhythms (Deleuze and Guattari, 1987). Together, these powers, openings, and closures constitute the 'affective causes' of interbody relationships.

Different types of bodies have different types of affordances for other bodies and they possess different types of powers for their own expressions and emergence. Bodies are relatively 'hard' or 'soft'—impenetrable or penetrable—to affects. The same body, depending on its specific structure, may open to the powers of other bodies or not (e.g., the plane moves smoothly along the grain of the wood, but not smoothly across its grain; the plane immediately digs into the wood, but the wood only gradually wears down the plane (to use the aforementioned example from Massumi, 1993). Humans, and to various degrees other living beings, are open to social, cultural, and physical affects. Humans and machines interact because of human adaptation, via training and experience, to a machine's design, and the machine interacts with humans through the logical possibilities of its initial design and to whatever possibilities for learning through experience and evolving that may be designed into it. Bifurcations out of in-common relationships result in a co-emergence due to mutual affects. The expressions of the co-emergences, as we earlier stated, are mediated by ontological powers and by contextual affordances, which of course, also then condition interbody affective mediations.

In sum, mediation toward a body's expression and emergence occurs along two axes: contextual or 'structural' affordances for expression and interbody affects. The first is a type of formal causation, the second is a sort of 'affective causation.' These two axes condition one another. The possibilities of affective causation and co-emergence are rooted in spatial and temporal regimes of co-determinate affordances and historical lineages. Such regimes result in in-common zones for affects between bodies. Such zones are the ontological preconditions for 'situated' actions between bodies, and when understood in terms of intention, or the lack of such, bodies are understood as subjects and objects, respectively.

Conclusion: Beyond the 'User'

The discourse of 'users,' 'information' and their causal relations in LIS and some IS discourse has been a product of institutionally sanctioned cultural forms and social norms, which remain rooted in a metaphysics of subject–object relations understood according to causal models borrowed from engineering and classical physics, that is, in terms of physical bodies linked by mechanistic causation. Communication models borrowed from folk psychology (i.e., the conduit metaphor) then support the understanding of 'information events' as communicational phenomena of this mechanistic causal type. Such a metaphysics and metaphorical borrowings contribute to a certain type of scientism in the field, which in turn affects its research methods, the topics that are studied, and the results of the research.

The result is a user tradition that maps onto phenomena metaphysically laden and operationalized models of reality with a conceptual logic and appropriateness that is surprisingly little questioned. Instead of viewing theoretical models

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as subject to evaluation in terms of their empirical aptness, LIS theory and practice often seems to view models as being 'foundational' frameworks through which phenomena are to be understood. And yet, then, the internal logical coherence of the models and the appropriateness of their borrowings from other sciences and from folk discourses are little critically examined. Such a hermetic disciplinary theory and practice—institutionally sealed against both empirical and conceptual critiques—constitutes a very curious understanding of scientific or even scholarly activity. And the use of "numbers" (as is sometimes said) in itself in the research has nothing to say as to whether scientific or scholarly work is being done.

What is the answer to such a situation? As has been suggested here, in part the answer is conceptual critique, and this critique must extend to not only the theoretical models, but to research practices and methods and to the very conception of theory and the conception of disciplinary foundationality in the LIS field. There is still much work to be done here.

In this article I have suggested a model that views subjects and objects as co-emergences mediated through co-determining, contextual (or 'structural') affordances and through in-common zones of mutual affects. This model shifts the analysis from bodies linked by determinate causes and their effects to ontological and contextual powers ('affordances') and their 'interbody' zones of affect.

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Endnotes

[1]In this article the terms "expression" and "emergence" must be seen as overlapping concepts, as expression gives form to the possibility of singular and recognized identities. Emergence is, thus, a form of expression, but one that is often understood in terms of the actualization of hypothetical or real unities of potential expressions. Such potential expressions, as Harré has argued in his works, are the "powers" of bodies (understood across the natural and social sciences according to differing types and degrees of nonmeaningful (physical) and meaningful (social and cultural) affordances).

[2]It might be noted that the precedent model for Belkin's anomalous states and the role of 'information' in it might be Leon Festinger's notion of "cognitive dissonance." And like critics of Festinger's work, we could ask how it is that people should feel a cognitive state of dissonance, that is, 'anomalous states of knowledge'? People work amidst fragmented frames of reference and contrary and contradictory issues all the time without suffering anxiety or feelings of 'needs' for filling these "gaps," to use Brenda Dervin's phrase. Why are these not all accompanied by anxiety? Why are not all "gaps" accompanied by 'information seeking' behavior? Simply, the concepts of "anomalous states" and "gaps" raise more questions than they answer. As Davenport (2009) suggests, the concept of "gap" in Dervin's works and in the tradition seems too broad an analytical category. For a discussion of strikingly like issues in regard to Festinger's concept, see Harré and Secord (1972, pp. 284–285).

[3]More complete critiques of information seeking behavior studies can be found in Case (2007), Davenport (2010), and Frohmann (2004). In addition, Davenport (2010) gives insightful discussion and a bibliography of important LIS user-oriented approaches in Scandinavia and their turn away from North American LIS user epistemological and methodological assumptions (e.g., Savolainen) and the incorporation of constructivist traditions and "information practice" approaches (e.g., Talja).

[4]Historically, in contrast to the mainstream LIS user tradition, the research area of Social Informatics (SI) (understood in the North American context—for a broader, transcontinental account, see Davenport, 2008) proposed the study of subjects and objects (in the form of persons and technologies) as epistemologically joined entities in specific organizational settings outside of documentary centers and libraries. Institutionally, SI formed a bridge between the LIS worlds and the IS worlds. Overall, however, SI seems to remain wedded to an investigation of information technologies' effects upon human activities in organizations. In the early works of Rob Kling and others at the time, the 'effects' of technology upon persons were discussed in organizational settings. Later works of Kling, though, took more account of the symbolic construction of information technology and persons within "computerization movements" and as part of other discursive and cultural forms (see Day, 2007). Later work in SI, which has extended this last type of analysis in much more detailed fashion and to a greater field of interest in AI and HCI, is that of the work of Hamid Ekbia. For example, Ekbia (2009) in a paper on digitally mediated objects using Serres and Latour's notion of the quasi-object advances an argument about objects toward a discussion of subjects and objects in mutual relations. Ekbia (2009) has used the term "mediation" to discuss the integration of subjects and objects. While Kaptelinin and Nardi (2006) understand Vygotsky's work largely through Leontiev's understanding of sociohistorically composed "activity," the Foucauldian notion of "discourse" seems to be another theoretical term through which subject–object 'mediations' are understood to take place, as seen in Kling's later work and most usefully in Ekbia and Evans' (2009) like understanding of "regimes." These ideas represent an advance over LIS's user studies in our understanding of subjects and objects in that they argue for notions of shared forms or 'inscriptions' for subjects and meaningful objects and their expressions and emergences, whether those objects are understood as technological or textual.

[5]This is not to write, of course, that sociocultural materials do not have physical properties—e.g., language as print, speech, etc.

[6]While it is true that neural impulses from the central nervous system are one of the physical causes that mechanistically cause a finger to pull a gun trigger, this is hardly what could be said to cause a person to commit a murder. Taking such a position would be radical reduction of the grammar of 'person.'

[7]To the best of my knowledge, the term "affordance" doesn't occur in Harré's writings until 1990, but the concept appears throughout his earlier writings using different terms. For the sake of this article, I will use the term "affordance" to cover all the terminological references to this concept in his writings.

[8]While it is tempting to want to do away with the category of 'subject' altogether and replace it by 'human beings,' 'persons' (generally understood) or some such term, it is a useful category for discussing many different beings that display degrees of intention, some of which may not be seen as full-fledged persons—for example, nonhuman animals.

[9]Jacques Lacan's works are notoriously and purposefully 'indirect' in their address. It must be recalled that they were largely tactical interventions into institutionally located theoretical and practical problematics in psychoanalysis and that they utilize a rhetorical style that is filled with metonymic and other rhetorical devices that mimic Lacanian analysis in the clinical setting. Consequently, a more traditionally pedantic elucidation of 'Lacanian theory' requires secondary sources. The secondary literature on Lacan's work is now quite large across a multiplicity of languages. In English, reliable reference works include Evans (1996) and the more general work of Laplanche and Pontalis (1973). Slavoj Žižek's works are sometimes very insightful readings of Lacan's works, although they do not attempt a systematic presentation. Lacan's 'essential works' are often taken to be his *Écrits* (Lacan, 2006—the earlier English translation of this work was incomplete) and *The Four Fundamental Concepts of Psycho-Analysis* (Lacan, 1981), although the reader should remember the tactical and changing nature of even fundamental concepts in the course of his oeuvre. Lacan's seminars have been incrementally appearing in English translation as well.

[10]The concept of desire, here, *pace* the German Idealists, designates a "power" in the sense of a force (French, *puissance*; Italian, *potenza*), specifically, a life-force—what in a broader, contemporary European intellectual tradition Michel Foucault, and after Foucault, Antonio Negri and others more recently have termed "bio-power." In Harré and Madden (1975), the power of "powerful particulars" has the sense of an expressive power from out of potencies.

[11]In Lacan and the French psychoanalytic tradition influenced by Hegel, this 'energy' or force is understood as more historically constructed from out of particular subject–object relationships, that is, as a product of historical dialectics.

[12]By juxtaposing the work of Harré and that of Deleuze and Guattari I am juxtaposing two traditions of characterizing persons as agents, as well—the Anglo-American and the continental, particularly the post-World War II French philosophical and cultural traditions. While Harré's work attempts to explain the subject in terms of normative analyses, which open to the study of the subject in terms of scientific regularities, Deleuze and Guattari's works often seem to explicitly work against normative analyses. Given the strong tendencies toward premising user types and toward establishing scientific legitimacy in LIS discourse, it is not surprising that Harré's work would seem the more appealing to such a discourse. But, one must bear in mind that the two bodies of work intersect on two fundamental points, which lead me to juxtapose the two in this article: first, the common appeal to an expressionist philosophy with notions of contextual affordances for expression and emergence and, second, an ontology and an epistemology based on what Harré and Madden (1975) termed "powerful particulars" and their possession of powers of expression, issuing from ontological characteristics rather than from causal effects. Such "particulars" in Harré and Madden's work (1975) are seen in such events as "a springtime plant forcing its way upwards towards the light ... [and the] imaginative control of his own actions exercised by a human being" (p. 7). I pick these two examples from the Harré and Madden quote because they nicely dovetail with the modern French tradition's reading of the German tradition's (particularly German Idealism and Freud's writings) understanding of "*Trieb*" (for example, one's central drive or desire in life as a power analogous with the 'drive' of a plant in its blossoming or sprouting, as described in German according to "*treiben*"). Here the concept of *Trieb* signifies a life-force, and as such it is picked up within the works of some post-World War II French, and more recently, Italian authors' emphases upon radical subjectivity—human "powerful particulars" using Harré and Madden's term (1975). The common epistemological and metaphysical foe in these works, as explicitly brought out in Harré and Madden (1975), is the Humean notion of causation—the mechanistic model of causation that we critique in this article. In Deleuze and Guattari's case the political and social models that incorporated mechanistic determinism that they were working against in the French cultural and social tradition were those of orthodox Marxism and orthodox psychoanalysis. Today in LIS—and perhaps socially at large as well—one common problem might be the validity of the explanatory claims of the social sciences, particularly in LIS in terms of user studies and in terms of speculative inductive claims based on statistical studies (e.g., bibliometrics).

[13]On the other hand, since selves are hypothetical and maturity consists of recognizing one's own actions as persons, repeated actions are not unjustly attributed to the way a person 'is,' whatever our moral judgment of these habits may be. Likewise, the problem of judging human expressions as expressions of a self or a person in social research is tricky. Certainly we must be conscious of the age of the individual, as we would attribute less 'personhood' (in the sense used above) to a child and we would excuse less 'self-centered' behavior (in the sense used above) in an adult. Norms differ, too, between societies and cultures, and these differences are not analogous to the child-maturity scale we have just mentioned.

[14]The category of 'quasi-object' immediately blurs a strict conceptual division between information tools and information objects (in the sense of 'content'). Both 'tools' and 'objects' can be analyzed in the manners that we have been suggesting, as they constitute meaningful entities in the subject's world. Possibly, the distinction between tools and objects as these terms are often used in distinction to one another would occur through an analysis of our use of the entities and our discursive practices.

[15]Needless to add, the notion of "affects" is not a synonym for emotions, as this latter term is often understood in terms of a traditional Western dichotomy between 'cognitive' and 'emotive' states. "Affect" here does not mean 'emotions,' per se, but rather forces that mentally or physically press upon a body.

References

Belkin, N.J. (1977). Internal knowledge and external information. In M. de Mey & J. Piaget (Eds.), CC 77: The cognitive viewpoint (pp. 187–194). Gent, Belgium: University of Gent.

Belkin, N.J. (1990). The cognitive viewpoint in information science. Journal of Information Science, 16(1), 11–15.

Blair, D.C. (2006). Wittgenstein, language and information: 'back to the rough ground!' Berlin, Germany: Springer.

Brown, S., & Lightfoot, G. (1999). Quasi-objects, quasi-subjects: Circulation in the virtual society. Paper presented at Sociality/Materiality: The status of the object in social science at Brunel University, Uxbridge, United Kingdom, 9–11 September, 1999.

Case, D.O. (2007). Looking for information: A survey of research on information seeking, needs, and behavior. Second edition. New York: Elsevier.

Davenport, E. (2008). Social informatics and sociotechnical research—a view from the UK. Journal of Information Science, 34(4), 519–530.

Davenport, E. (2010). Confessional methods and everyday life information seekers. Annual Review of Information Science and Technology (ARIST), (Vol. 44, pp. 533–562). Medford, NJ: Information Today.

Day, R.E. (2000). The "Conduit Metaphor" and the nature and politics of information studies. Journal of the American Society for Information Science, 51(9), 805–811.

Day, R.E. (2007). Kling and the "critical": Social informatics and critical informatics. Journal of the American Society for Information Science and Technology, 58(4), 575–582.

Deleuze, G. (1994). Difference and repetition. New York: Columbia University Press.

Deleuze, G., & Guattari, F. (1977). Anti-Oedipus: Capitalism and schizophrenia. New York: Viking Press.

Deleuze, G., & Guattari, F. (1987). A thousand plateaus: Capitalism and schizophrenia. Minneapolis, MN: University of Minnesota Press.

Ekbia, H.R. (2008). Artificial dreams: The quest for non-biological intelligence. Cambridge, United Kingdom: Cambridge University Press.

Ekbia, H. (2009). Digital artifacts as quasi-objects: Qualification, mediation, and materiality. Journal of the American Society for Information Science and Technology, 60(12), 2554–2566.

Ekbia, H., & Evans, T. (2009). Regimes of information: Land use, management, and policy. The Information Society, 25(5), 328–343.

Evans, D. (1996). An introductory dictionary of Lacanian psychoanalysis. New York: Routledge.

Frohmann, B. (2004). Deflating information: From science studies to documentation. Toronto, Canada: University of Toronto Press.

Given, L.M. (2005). Positioning theory: A framework for information behaviour research. In K.E. Fisher, S. Erdelez, and L.E.F. McKechnie (Eds.), Theories of information behavior: A researcher's guide (pp. 334–338). Medford, NJ: Information Today.

Harré, R. (1984). Personal being: A theory for individual psychology. Cambridge, MA: Harvard University Press.

Harré, R. (1989). The self as a theoretical concept. In M. Krausz (Ed.), Relativism: Interpretation and confrontation (pp. 387–417). Notre Dame, IN: University of Notre Dame Press.

Harré, R., & Secord, P.F. (1972). The explanation of social behaviour. Oxford, United Kingdom: Basil Blackwell.

Harré, R., & Madden, E.H. (1975). Causal powers. Oxford, United Kingdom: Blackwell.

Harré, R., & Langenhove, L. (Eds.) (1999). Positioning theory. Oxford, Untied Kingdom: Blackwell.

Kaptelinin, V., & Nardi, B. (2006). Acting with technology: Activity theory and Interaction design. Cambridge, MA: MIT Press.

DOI: 10.1002/asi

Kuhlthau, C.C. (1991). Inside the search process: Information seeking from the user's perspective. Journal of the American Society for Information Science, 42(5), 361–371.

Lacan, J. (1981). The four fundamental concepts of psycho-analysis. New York: Norton.

Lacan, J. (2006). Écrits. New York: Norton.

Laplanche, J., & Pontalis, J.-B. (1973). The language of psychoanalysis. New York: Norton.

Massumi, B. (1993). A user's guide to capitalism and schizophrenia: Deviations from Deleuze and Guattari. Cambridge, MA: MIT Press.

Reddy, M.J. (1993). The conduit metaphor—A case of frame conflict in our language about language. In Metaphor and Thought (2nd ed., pp. 164–201). Cambridge, United Kingdom: Cambridge University Press.

Sawyer, S., & Eschenfelder, K. (2002). Social informatics: Perspectives, examples, and trends. In B. Cronin (Ed.), Annual review of information science and technology (Vol. 36, pp. 427–465). Medford, NJ: Information Today.

Sawyer, S., & Rosenbaum, H. (2000). Social informatics in the information sciences: Current activities and emerging directions. Informing Science, 3(2), 89–95. Retrieved December 2, 2005, from http://www.inform.nu/Articles/Vol3/v3n2p89–96r.pdf

Serres, M. (1982). The parasite. Baltimore: Johns Hopkins University Press.

Weaver, W. (1949). Recent contributions to the mathematical theory of communication. In The mathematical theory of communication. Urbana, IL: University of Illinois Press.

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