Introduction

As information technologies increasingly embed themselves into the background of our everyday lives, it is becoming more important for us to take a closer look at the new forms of social practice that emerge. This emphasis on practice methodologically departs from previous scholarship by introducing an ethnographic approach to the study of information technologies, specifically social classification systems. From this ethnographic approach, this paper argues that concepts of monologue and dialogue elucidate the ways in which people participate in social classification systems and, more importantly, the ways in which they negotiate their relationships to a larger digital public. More specifically, this study shows how participants are able to performatively inscribe themselves into digital existence through dynamics of heteroglossia. Understanding the dynamics of monologue and dialogue in these systems can inform our understanding of internet culture more broadly. The kinds of self-conscious naming, labeling, and annotation that we find in social classification systems has evolved into a common feature throughout the internet. Moreover, by borrowing concepts from linguistic anthropology, this paper may inform broader discussions of subjectivities and digital selves within larger digital publics.

Literature

Concepts of practice serve as a guiding point for the methodological approach to this study. More specifically, the concept of practice underscores the ways in which information is rendered meaningful with respect to contexts and social relationships. Social constructionist approaches to the study of information affirm the notion of practices as a response to previous inquiry in which information was often viewed as a cognitive function, taking place solely within the mind of the individual. The notion of practices serves to shift our attention to the ways in which information is socially constituted among relationships, between people during processes of dialogue, interaction, language, and communication (Pettigrew, Fidel, & Bruce, 2001; Tuominen & Savolainen, 1997). Under this concept of practice, researchers have sought to understand the socially and culturally shaped ways of understanding information practices, that is, the practices of seeking, accessing, creating, using, and sharing information (Frohman, 1992; Tuominen, Talja, Sanna, & Savolainen, 2002; Tuominen, Talja, & Savolainen, 2005; Savolainen, 1995). Put simply, information practices are constituted dialogically and discursively through the social contexts of interaction, communication, and meaning exchange (Talja & McKenzie, 2007; Tuominen et al., 2005). As a result, information and their technologies are not stable, uncontested phenomena. Instead, they are made and produced within the

processes of discourse. This turn towards communicative, discursive, and linguistic practice has become increasingly salient with the application of this framework to the study of information practices in a variety of sites and locations, including online chat groups (Park, 2007), among firefighters (Lloyd, 2007), and among blue-collar workers (Veinot, 2007).

This practice framework is a useful approach for the study of social classification systems in light of recent findings. Early research has focused primarily on providing broad descriptive accounts of these systems (Bateman, Brooks, Mccalla, & Brusilovsky, 2007; Golder & Huberman, 2006; Marlow, Naaman, boyd, & Davis, 2006). Additional work has identified the individual goals and motivations for use of these systems (Furner, 2007); however, these studies have not explored the social and group dynamics that shape how these systems are used. While these studies recognize the explicit social dimension to these kinds of classifications, there has been little research that explicitly considers their dynamics. Understanding the social dynamics of these systems is especially important given the delicate negotiation between the individual and the larger social collective that takes place in these systems. When processes of personal information organization and management become instantaneously translated into processes of knowledge distribution and sharing in this manner, social classification systems operate within several layers of context including the individual context of personal information organization—incorporating both online and offline environments—and the broader context of social connectivity, online networks, and digital publics. While current research of social classification systems has duly noted the importance of these multiple contexts, there has been little research that explicitly takes into account or specifically investigates the dynamics between them and how they inform each other.

Social Classification Systems Overview

In recent years, social classification systems have emerged as online tools that allow individuals to store and organize digital content. Social classification systems allow users to provide keywords and descriptive terms to mark and organize information. These systems are typically flattened structures with no specified relationships between and among terms, thus constituting a kind of categorization scheme (Rosch, 1973), in contrast to more hierarchal and formal classification schemes (Lund, Hammond, Flack, & Hannay, 2005; Mathes, 2004). These systems simultaneously allow individuals to privately collect and organize their digital collections while allowing them to publicly display and share their digital collections to friends or to a wider audience. In turn, these practices become social processes through the public sharing of tags and tagged content.

These systems typically exist as specific websites where individuals can develop their collections by uploading various types of content. Popular systems include YouTube for video sharing, Flickr for photo sharing, del.icio.us for the sharing and organization of URLs and links, and librarything.com for books and bibliography sharing. In addition, these systems allow individuals to annotate, comment, and categorize their digital content in a fairly unrestricted manner. Individuals can freely create keywords to describe their various collections. Over time, these keywords accumulate and grow, thus forming emergent schemas for the organization of digital content and information.

This study focuses on the use of one particular system, del.icio.us. This system allows users to collect, organize, share, and classify links or URLs. Del.icio.us was among the first social classification systems and has since emerged as one of the most well known. Within del.icio.us, users are allowed to organize their content in several ways. First, individuals are required to identify the URL of a given digital document. Then, they must add a title of the document in the section labeled "description." Individuals can then choose to add additional annotations in the section labeled "notes." In the section called "tags," individuals can add appropriate keywords.

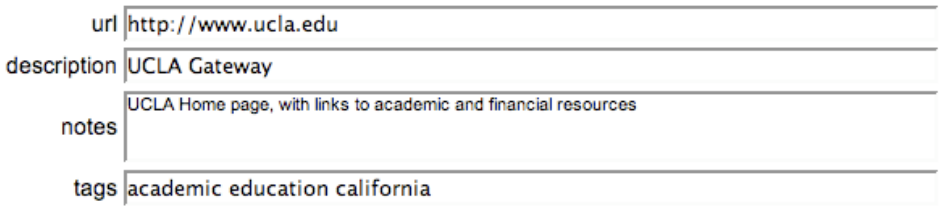

Figure 1. **Four fields of del.icio.us content**

From this, we can see that the anatomy of a digital document in del.icio.us consists of four distinct parts. The first two, the "URL" and the "description" are required fields, while the "notes" and "tags" fields are optional. In the following sections, this paper will demonstrate the ways in which the two optional fields provide opportunities for individuals to communicate to themselves and to a wider digital public. Taken together, these two fields form a repertoire that allows individuals to organize their content and communicate to others.

Methodology

This study took an ethnographic, qualitative approach and solicited users of social classification systems for interviewing. As this was the first stage of a multi-phase project, with the intent of identifying the conceptual possibilities of this methodological approach, participation was limited to two informants.

Participants were selected using a snowball sample technique, with emails sent to the author's personal network of social classification systems' users.

Data were gathered in two phases. First, this study employed a semi-structured interviewing technique. An interview protocol was designed based on themes originally identified by the author in order to solicit narratives of practice and use of social classification systems. During the course of the interviews, participants were first prompted with questions from the protocol; however, participants would often deviate and present additional examples that had not been expected. As such, although the original intent of the study focused on practices within del.icio.us, conversations very quickly evolved into discussions of auxiliary processes and support systems for similar functions. Participants were initially prompted with questions about their del.icio.us practices, but they often spoke of these practices in relation to uses of other social networking sites and their personal information organization processes.

Subsequently, through the use of the semi-structured technique, unanticipated and unforeseen themes were allowed to emerge. Data collection typically consisted of one-hour-long taped interviews. The data were then transcribed from the original sound files into text documents. From there, the documents were imported into a qualitative data coding software, Atlas.ti. After an initial reading of the data, a thematic schema was created from which the data were then organized, coded, and reanalyzed for prominent themes and trends.

Second, data also consisted of the publicly available del.icio.us content. This form of data collection was intended to provide additional insight into and specific examples of findings from the interview data analysis. As such, this secondary analysis consisted of a discourse analysis of the annotative remarks and commentary of the participants' del.icio.us content. Among the participants' total del.icio.us content, 50 items were sampled. These items were randomly selected for a total of 100 links for the entire data set. These data were then imported as texts for qualitative analysis in Atlas.ti. Analysis for this data was broadly organized around themes of linguistic practice.

Monologue and Dialogue in Social Classification

Social classification practices exist along a spectrum of monologue to dialogue. Monologue practices refer to personal acts of recording, saving, and collecting information, with the intent of personal use only. In contrast, dialogue practices in social classification systems refer to public forms of sharing that also include assessment and evaluation. Taken together, monologue and dialogue practices are tenuously balanced and negotiated in social classification systems suggesting that these systems comprise a polyphonic environment whereby multiple voices come together: the voice of the individual, the voice of the

document, and the voice of the document's author. This paper argues that through the combination of monologue and dialogue, social classification practices create digital micro-narratives that constitute forms of digital self-inscription. Thus, social classification practices ultimately comprise performative acts that allow participants to realize and constitute their digital selves. The following section will describe and provide examples of monologue practices, dialogue practices, and the ways in which they dynamically come together to create performative inscriptions.

Monologue

Within social classification systems, monologue practices refer to the ways in which individuals collect and store digital documents. These practices consist of efforts to archive and remember. In this manner, social classification systems serve as a memory prosthesis. In these cases, participants contributed materials to these systems based on the assumption that they would want to find and use them again in the future. In this view, social classification systems were used as a memory prosthesis to offload the responsibility of remembering the various information they encountered day-to-day. A participant described:

> I'm not going to remember it otherwise, so I want to be able to find this stuff later, and this is one mechanism that will guarantee this memory. So my memory is distributed between me and my computer. Or me and my computer's servers. Without them I think I'd be significantly handicapped at this time.

Individuals thus contributed and saved content to del.icio.us based on the notion that they might need it at a future date and thus wanted to be able to easily find and access these materials. In these memory activities, del.icio.us users engaged in a form of self-communication, whereby classification practices entailed the present self communicating to an imagined future self. Conversely, instances where individuals returned to their collections to re-find previously collected documents appeared to be an interaction with a previous self communicating with the present self.

When we take a closer look at monologue practices, we find that they consist of four distinct forms: (1) add content without additional commentary; (2) add content with only tags; (3) use tags to mark future actions; and (4) use of annotation in a diary form. In the first two forms, individuals gathered and collected digital documents while providing only a minimal amount of additional annotation. In the case of the first form, the participant entered the document into the system while only providing a title and a link, that is, the most basic information required for entry into del.icio.us.

Figure 2. **No additional commentary**

In the second form of monologue practice, participants provided an additional level of contextual information by including tags that expressed their interpretation of the substance and meaning of the given document. This introduced a minimal level of contextual information that indicated the user's perception of the document's "essential" meaning in relation to their worldview. For example, in Figure 3 we see that the participant has tagged a given link with five terms: soundart, radio, network, festival, music.

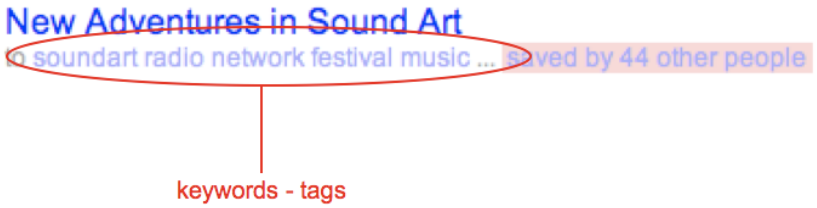

Figure 3. **Tags only**

For the third form of monologue, specific tags were used to indicate intended future action. Similar to a written to-do list, these tags functioned as reminders of various tasks that people intended to accomplish. In this form, tags functioned as future reminders, allowing the present self to communicate with the imagined future self. Figure 4 provides an example of this where a participant tagged a particular document with the term "toread." The use of the preposition "to" plus an additional verb appeared as common method to indicate this kind of imagined future action. Other examples included phrases like "to eat," "to do," "to study," "to try," "to see."

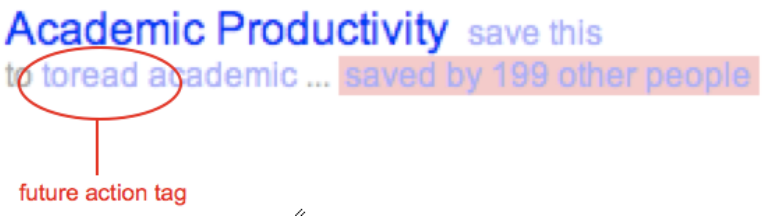

Figure 4. **Tags for future action**

The fourth form of monologue further elaborates on the memory and reminder dynamics we have seen in the previous forms, but includes more complex types of commentary in conjunction with the use of tags. Figure 5 is an example of a form of monologue described as diary annotation. In these forms, participants provided additional commentary and contextual information, similar to the kinds of voicing appropriate to diary modes of writing. Diary formats operated in two particular ways. First, they operated as a record of a particular notable event and as a space for reflection and catharsis. For example, in Figure 5, the diary annotation partially appears to be a record the participant's first important presentation. Additionally, these digital utterances suggest a kind of release of heightened emotions associated with the participant's nervousness, fear, and fatigue caused by this important event. The diary mode of conversation is also expressed in the syntax of the digital utterance through the explicit use of the first-person pronoun "I" which introduces an explicit authorial voice into the commentary. In doing so, the participant articulates an explicit relationship with the given document. The participant creates an explicit and personal relationship between themselves, their personal activities, and their documents, thus imbuing these documents with a kind of personal relevance. Through this kind of voicing, users are able to literally write themselves in relation to their digital content.

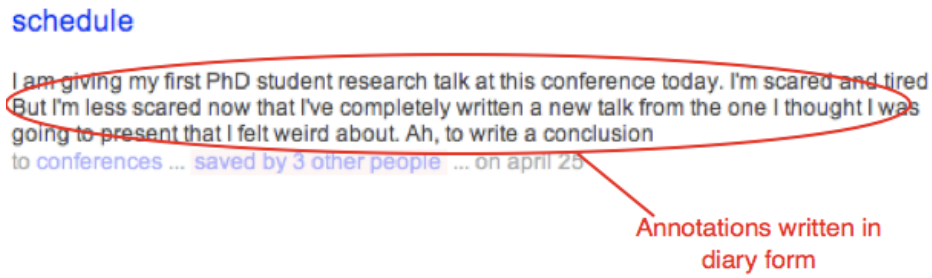

Figure 5. **Diary annotation**

The four forms of monologue described here represent a range of communications to the self we find in social classification systems. At one end we find more descriptive practices in contrast to the other end where we find more affective representations between the participants and their documents. The following sections will introduce concepts of dialogue in social classification practices.

Dialogue

In addition to monologue, we also find dialogue forms of practice in social classification systems. While monologue practices focus primarily on self-communication, dialogue in digital social classification systems are based on

imaginations and perceptions of interlocutors, audiences, and the extended digital public. As such, dialogue forms of practice help to weave individuals into the larger social fabric. This is achieved primarily through a play on voicing within the forms of commentary and annotation. Within social classification systems, it appears that dialogue manifests itself in several distinct forms, including: (1) attribution; (2) quotation; and (3) assessment. These three forms represent a spectrum in which participants animate others' voices or actively assert their own in the work contributing materials to social classification systems.

First, attribution statements consist of individuals citing sources of their documents. However, in social classification systems, it appears that the concept of source is viewed in terms of both author and recommender. For example, in Figure 6, an individual has introduced a book into the system. The individual has made a record of the names of the original authors. In contrast to this, we see in Figure 7 that the participant has created a link to a software program and has made a note of the individual who recommended the program to them.

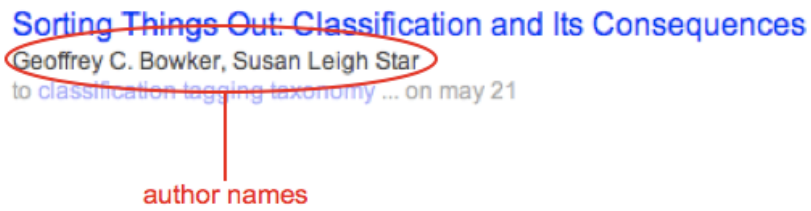

Figure 6. **Author attribution**

Figure 7. **Recommender attribution**

Thus, in acts of attribution, users identify how the document came to be known to them, who told them about it, and who originally wrote the document.

The second form of dialogue consists of quotation. Quotation in here is defined by those actions where the participants have directly culled portions of text from the document to represent the document itself. In these instances, the participants used direct quotations as a form of commentary and annotation. For example, in Figure 8, we see how the user has directly copied and pasted the first paragraph of the original document.

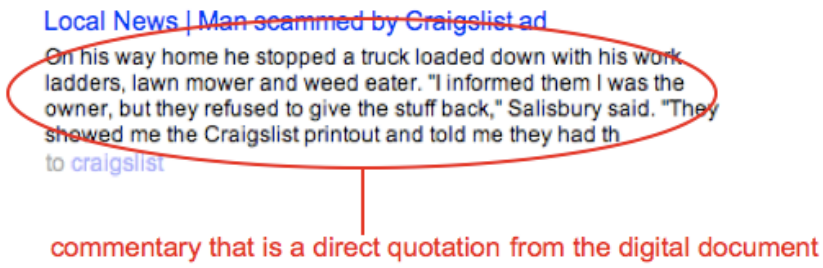

Figure 8. **Quotation**

In this scenario, voicing and authority of the commentary remains in the purview of the original document. By simply cutting text from the original document and re-using it in the context of meta-commentary and annotation, the authority and integrity of the text is kept intact, with fairly minimal introduction of the voice of the user.

However, the third form of dialogue—assessment—is notably different. By definition, remarks of assessment entail the expression of opinion and evaluation. In social classification systems, assessment forms of dialogue consist of articulations of opinion and evaluation that thus introduce more explicit renderings of the participants' personal voice. As a result, the presence of the individual is more apparent in these forms of dialogue. These assessment statements include a range of expression, from the fairly simple to the fairly complex. Simple statements involve the use of common adjectives like "good" and "bad" to evaluate a given document. Figure 9 is an example of this more simplified assessment, with the phrase "good global surf forecast."

Figure 9. **Simple assessment**

When compared with other forms of assessment, these simple forms are neutral; they indicate fairly simple assessments of good and bad, whether the individual likes or dislikes a given document. However, assessments also include more emotionally charged forms that are conveyed through textual exclamations. Exclamation can be expressed through traditional punctuation markers, like the exclamation mark, but exclamations also include orthographical markers through the use of acronyms like "LOL" or the phrase "haha" to indicate that a user finds

a particular document funny. Textual exclamations also include terms like "wow" or "whoa" that appear to be used as intensifiers of a given assessment or as an expression of shock.

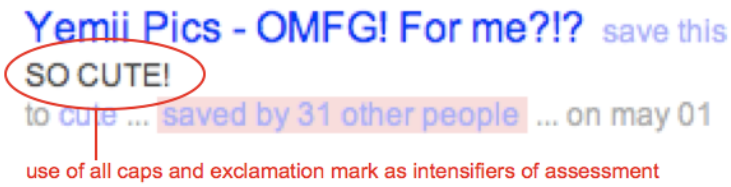

Figure 10. **Textual exclamations through punctuation markers**

Figure 11. **Textual exclamation through intensifiers**

One of the most interesting dynamics in social classification consists of how these forms of assessment occur in conjunction with other forms of monologue and dialogue. Figure 12 provides an example of this where we find a varied annotation of a digital document.

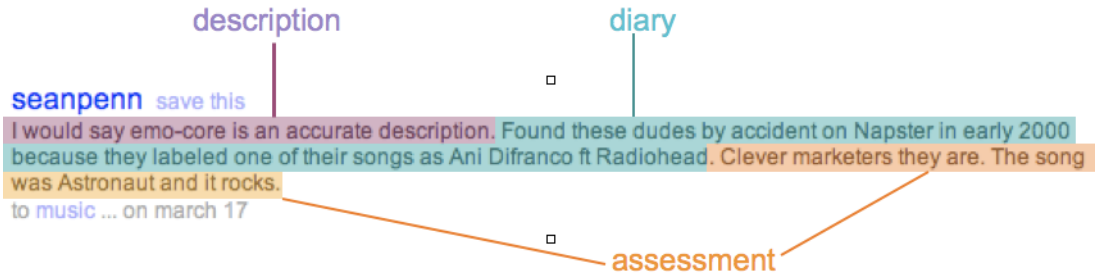

Figure 12. **Assessment, diary, and description**

Figure 13. **Assessment, attribution, and future action**

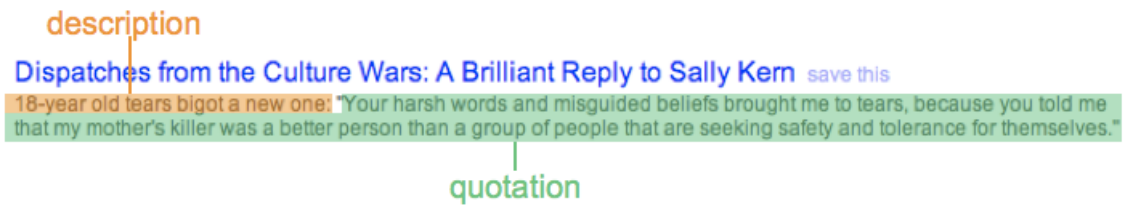

Figure 14. **Dialogue—assessment, description, and quotation**

The three examples presented above represent various ways in which individuals express their opinions, assessments, and evaluations of the various content and documents. Figures 13 and 14 demonstrate the ways in which individuals embed assessment remarks along with other forms of monologue and dialogue. These create rich forms of annotation and commentary that, in turn, establish contexts of meaning for each of the documents. It is important to note that in Figure 14, the user has not articulated an assessment statement in the annotation, but through the coupling of the description and quotation statements, assessment emerges from this kind of commentary.

The range of assessments introduced in this section demonstrates the various ways in which individuals explicitly include and inject their own voices into social classification systems. Assessments forms of dialogue are based on much stronger and assertive forms of voice, resulting in intricate expressions of self and more complex types of commentary. Assessments bring in more active voices of the participant, in turn creating micro-narratives for these documents. The emergence of micro-narratives constitutes a kind of digital self-inscription. Through the collection of a body of personally relevant documents, individuals organize and write upon this body of works. The dynamics of this organization and writing in social classification systems suggest that individuals are ultimately engaged in writing upon their own body of documents, upon their own selves, thus constituting their own digital body. Through the very act of writing such commentary, individuals are able to constitute themselves through their documents. Subsequently, these are fundamentally performative acts.

Discussion

The tentative findings from this study lay out a preliminary framework for understanding the nature and dynamics of digital practice. Using concepts of speech, language, and practice, this study attempts to identify the nature and dynamics of memory, social interaction, and information organization in an online social classification system. In digital social classification contexts, these private memory practices also happen concurrently with public acts of information sharing, recommendation, and taste performance. In turn, monologue and

dialogue consist simultaneously of collecting, organizing, and sharing information. Dialogic practices in social classification systems thus consist of a series of speech genres such as quotation, attribution, description, and assessment. These speech genres reflect the various ways in which individuals negotiate the multiple authorial voices within their documents. In this view, social classification systems appear to accommodate and explicitly render the polyphonic nature of linguistic practice. This suggests that social classification systems have been designed in such a manner that individuals are able to represent the plurality of voices that are embedded within any given document.

Digital practices in social classification systems thus comprise a form of heteroglossia, whereby individuals shift through multiple forms of voicing. In this manner, heteroglossia in this digital environment includes the voice of the individual tagger-collector, the voice of the document, the voice of the document's author, and the voice of the recommender. The continual switching of voicing demonstrates how oftentimes in our speech we do not speak from our own original voice. Examples of quotation in social classification systems demonstrate the ways in which individuals are able to animate the voice of others in their digital utterances. This ability to call forward multiple voices can be seen as a kind of corporal displacement that is also complemented by a temporal negotiation in which individuals manage their records and documents of their past and present based on their anticipation of the future. This is seen in the participants' use of future action tags as well as in their diary forms of annotation. In this way, practices in social classification systems are ideal examples of the notions of polyphony in texts and subjectivity (Bakhtin, 1981). Subsequently, the micro-narratives that emerge from these digital practices constitute a form of self-inscription in which individuals constitute themselves through digital speech. Through this performative quality (Austin, 1975), individuals are able to create their digital selves through their digital speech. Individuals are able to constitute their digital selves through the very acts of collecting information and writing public commentary. As a result, individuals are able to write and classify themselves into digital existence.

Conclusion

This study provides a new methodological approach to the study of social classification systems. From this approach we gain a better perspective into the ways in which people use, organize, and publicly share their digital information. Moreover, this approach elucidates new forms of engagement whereby text, speech, language, and practice converge within digital environments. In addition, this research builds on a growing theoretical tradition in information studies that underscores practice. Future research should continue with this practice

framework and continue to examine speech practices like monologue and dialogue, not only in social classification systems, but in other types of internet sites. This study argues that speech genres may be viewed as a kind of anatomy of a digital self and digital body. Through these performative speech practices, users of social classification systems are able to constitute and enact themselves, thus classifying and writing themselves into digital existence. Thus, future studies should also theoretically incorporate concepts of polyphony and heteroglossia more explicitly. Doing so may provide theoretical continuities with previous research that explores digital subjectivities, digital texts, documents, and the digital bodies (Butler, 1999; Haraway, 1991; Hayles, 1993).

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