IBM Research Report

HCI as Translation Work: How Translation Studies can Inform HCI Research and Practice

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To be presented in the CHI 2004 Workshop on Reflective HCI

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ABSTRACT
This position paper extends the argument that HCI work is a kind of translation work, in which the HCI worker both transforms and transports knowledge from one culture (e.g., users) to another culture (e.g., software professionals). Based on earlier work with ethnocritical heuristics, I explore how the thousand year history of translation studies may inform our work in HCI. Lessons learned illuminate choices in the following areas: the unit of work, the transformation of information, the construction of "users," and the organizational positioning of the HCI work. I hope to use cultural critique and translation theory to interpret and advance HCI as a hybrid, interdisciplinary endeavor.

INTRODUCTION[1]
Much of the work of HCI involves many aspects of translation. HCI workers often are in the role of *receiving* information or knowledge from their sources, *adding value* to that information by selecting, summarizing, and explaining it, and *delivering* that improved information to their audiences. For example,

- In the HCI practice of **requirements analysis**, the source is often the users, and the recipient is often the development team.

- By contrast, in the HCI practice of **design**, the source is often the development team, and the recipient is often the users.

- Finally, in the HCI practice of **usability evaluation**, the source is again the users, and the recipients are again the development team

The principal activities of translation are transportation and transformation (Maier; 1994; Ortega y Gasset, 1937/1992; Raffel; 1989; Scheiderer, 2001). We receive information from one group, and we *transport* it to another group –

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[*] This position paper extends an argument begun in (Muller, 1999b). Some paragraphs have been copied from that earlier work.

often moving ourselves and the information from one geographical or organizational location to another. We receive information from one group, and we *transform* it so that it will be understandable to another group – often thinking carefully and strategically about how our acts of transformation and transformation may benefit one group, or the other, or preferably both.

Translation has been described as an "impossible necessity" – an act that cannot be done correctly, but that must be done if people who are different from one another are to communicate with one another (Cutter, 1997). As I will attempt to show, this is as true for HCI as it is for other fields. In an earlier work on applying the cultural critique theory of ethnocriticism (Krupat, 1992) to HCI (Muller, 1997, 1999a), I began to explore our own "impossible necessity" of transforming users' information into a form that is palatable to software professionals and others of our colleagues. This problem, which Suchman highlighted as the issue of *representation* (Suchman, 1995), continues to trouble us: We must explain the users' world to our software professional colleagues, but when we do so, we must constantly balance our fidelity to the users (the need to report the users' world as *they* see it) against our fidelity to our software colleagues (the need to present clear conclusions that can immediately be put to use by people who are uninterested in the users' view of their own world).

In this paper, I pursue several themes from that work, focusing on the HCI worker as the person who *goes between worlds* – typically, the world of the users, and the world of the software professionals. Because translators are people who *go between worlds* (), I use insights from the 2000-year history of translation studies as part of my analysis.

TRANSLATORS BETWEEN WORLDS: TO WHAT END?
Translation has a complex history. On the one hand, translation makes different world-views intelligible to one another (e.g., Baker, 1992; Dingwaney and Maier, 1994; Karttunen, 1994). In HCI, translation has been described in analogous terms, as a way of bridging between different

knowledges (Williams, 1994; Williams and Begg, 1992).[2] Without translation and translators, differences between groups and peoples can become causes of conflict and destruction. In this view, the translator becomes an agent of communication and explication.

Whose World?

But translation also has a more troubling side. Many students of translation have described the practice as a matter of alteration and even distortion (e.g., Venuti, 1995, 1998). Bassnett and Lefevere (1993) note that

> Translation is, of course, a rewriting of an original text. All rewritings, whatever their intention, reflect a certain ideology and a poetics and as such manipulate literature to function in a given society in a given way. Rewriting is manipulation, undertaken in the service of power… The history of translation is the history also of cultural innovation, of the shaping power of one culture upon another.

Indeed, some writers in the post-colonial or subaltern studies tradition have described translation as one of the weapons of colonialism (e.g., Cheyfitz, 1991; Krupat, 1993), as an act of violence that silences the source for the benefit of the recipient (Venuti, 1998), or as an act of destruction preceding an act of reconstruction (Peden, 1989). Karttunen's accounts of the acts and biographies of individual translators, situated between cultures or power groups, show repeatedly the cost of translation to the less powerful culture, and often to the individual translator, as well.

Venuti argues that it is important to recognize *who* is performing the translation, and what the translator's goals and assumptions are (see also Bassnett and Lefevere, 1993; Karttunen, 1994; Krupat, 1992). Part of this work is explicitly to position the translator as part of the work of translation – i.e., to avoid the appearance of fluency or transparency, and to make the translator's own role and

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[2] Translation as I have described it is not a new concept in HCI. Williams has developed a study of practices that are used by a special case of HCI translator – persons who have subject matter expertise in the users' task domain and in HCI, and who can therefore provide interpretive services between users and software professionals (Williams, 1994; Williams and Begg, 1992). A brief electronic search found 38 papers that make reference to translation as a human transformative process in HCI, perhaps most influentially Dix et al. (1998), Mackay (1990), Nielsen (1994b), Norman (n.d.), Rosson and Carroll (1996), Smith (1988), Smith and Mosier (1986), and Star and Griesemer (1989). Thus, in this paper, I am not so much introducing a new topic as attempting to bring rigor to a topic of long-standing but diffuse interest in HCI.

position *visible* (Venuti, 1995), as "irrevocably mediate" (Dingwaney, 1994). A similar argument was made regarding the positionality of the HCI worker by Plowman et al (1995).

In our own work in HCI, we sometimes face similar problems. The analyst in HCI is often in the role of a work-rationalizer – an expert who attempts to find inefficiencies or redundancies in work, with the goal of making work processes more productive from the perspective of the organization as a whole (e.g., Bailey, 1993). As the participatory design tradition has emphasized, this perspective is more likely to favor executives' workplace perspectives over those of low-status workers (Bjerknes, Ehn, and Kyng, 1987; Greenbaum and Kyng, 1991; Schuler and Namioka, 1993). Similar conclusions have been reached in non-HCI-based studies of low-status workers (e.g., Kramarae, 1988; Rakow, 1988; Rapp, 1993; for a CSCW example closer to HCI, see Wagner, 1993). As the HCI analyst goes between the world of the workers and the world of the executives, they face challenges similar to those faced by translators: *Whose world-view is to be supported? At what cost?*

Similar questions arise when HCI workers move between the world of the workers and the world of software professionals. Software professionals face their own set of challenges, most of which are concerned with being effective in their own work. As Floyd has explained, the perspective of software professionals favors certainty over ambiguity, definitive tests over exploration, uniformity over diversity, and fixity over mutability – despite the fact that human work in complex situations is often characterized by ambiguity, exploration, diversity, and mutability (Floyd, 1987). In order to be useful to software professionals, HCI workers are often called upon to simplify the users' world and world-view – to make the users' complex experiences conform to the language of requirements analysis and software engineering. And in the course of constructing fixed requirements from the ambiguous, exploratory, diverse, and mutable world of the users, HCI workers often have to engage in a process of analysis-followed-by-synthesis that is disturbingly similar to the process of destruction-reconstruction outlined by Peden (1989).

Whose Voice?

These problems for HCI workers are made more acute by the mediating role that HCI workers often occupy. While we like to say that the users are the experts in their own work, our colleagues in software engineering (and their executives) often require *us* to take on the role of experts. This position puts us on dangerous ground, because we become the only voices for the users, and we are not the users. Our voice then becomes privileged in comparison with the voices of the users.

In a powerfully disturbing essay called "The problem of speaking for others," Alcoff explores some of the ethical and political issues when one non-representative voice is

privileged over other voices (Alcoff, 1991). Alcoff outlined three cases in which one person was expected to speak on behalf of others, with three different outcomes – all of which were unsatisfactory or disappointing for various reasons.

The HCI worker is nearly always privileged in the way outlined by Alcoff. The development team chooses the HCI worker as the representative or proxy for the users. Sometimes, the organization designates the HCI worker as the knowledge-owner regarding the users' work. The HCI worker thus has verbal privilege (Rich, 1983/1986) over the users – even though the users know more about their work than the HCI worker (Muller, 1997). The representation constructed by the HCI worker can have profound impact upon the development process and the outcome for the users. These issues return us to the problem of representation (Suchman, 1995), and the impossible necessity (Cutter, 1997) of representing the users to our colleagues.

Yet we (HCI workers) *do* have to represent the users, in at least two ways. The most obvious kind of *representation* occurs when we speak in the users' voice: We report the users' needs, usually on the basis of our understanding of the users' goals, objective, strategies, and tactics.

A second kind of *representation* occurs when we describe the users to the software professionals who are our colleagues. We construct a description, an account, perhaps one or more scenarios, which describe not only what the users do, but also who the users are. Software professionals have come to understand that they are not designing and developing systems for themselves, but for the users. They rely on us (HCI workers) to tell them about those users.

But these two aspects of representation are exactly what Alcoff (1991) warned us about. When we speak *for* the users, we replace their voices with our own – and we know that we, as translators, inevitably distort the users' voices when we put their words into our mouths. When we speak *of* the users, we construct the users as a concept to be communicated to our colleagues. In cultural critique, this act of social construction of someone who is not ourselves has been called the construction of the "foreign subject" or of "the other," and is considered to be a perilous act on grounds of epistemology, ethics, and politics (e.g., Krupat, 1992; Lyotard, 1979/1984).

CHOICES IN HCI TRANSLATION
It may help us to look to the kinds of choices that translators have had to make, over the long history of translation and translation studies. In this position paper, I will briefly describe these choices, with the hope of pursing them at greater length in a longer work.

The Unit of Translation
In some views of HCI and requirements analysis, there is a tradition of reducing complex concepts to simple relationships. Object-oriented analysis, for example, may seek to find nouns and verbs, and to combine them into simple and unambiguous requirements statements. Entity-relationship models work similarly, finding a set of objects and specifying their relationships. Is this a sufficient description of human work?

In practice, translators operate at multiple levels of analysis. While it is easiest to think about translation at the level of words, many theorists of translation have recognized that there are multiple aspects of words, and that words change their meanings depending upon context. Two-hundred years ago, Schopenhauer (1800/1992) argued that

> We will never grasp the spirit of the foreign language if we first translate each word into our own mother tongue and then associate it with its conceptual affinity in that language – which does not always correspond to the concepts of the source language – and the same holds true for entire sentences… A complete mastery of another language has taken place when one is capable of translating not books but oneself into another language.

Paz (1971/1992) referred to word-for-word translation as "a glossary rather than a translation… Without exception, even, when the translator's sole intention is to convey meaning, as in the case of scientific texts, translation implies a transformation of the original…"

If we think about HCI analysis as a kind of translation, we may find useful analogies to the work of linguistic translators. Translators do indeed assemble glossaries, but they also look to the associative meanings of words, and the ways that words are characteristically used (Baker, 1992; Danks et al., 1997). We may usefully test and interpret our object-oriented analyses, our entity-relationship diagrams, and our specification languages against more macro-level, interpretive, associative representations. We should find agreement among these different levels of analysis – or we should review and revise our more elemental definitions until they no longer conflict with these broader accounts.

Who Moves?
A second major question in translation studies was summarized by Schleiermacher's influential proposition: "Either the translator leaves the writer alone as much as possible and moves the reader toward the writer, or he [sic] leaves the reader alone as much as possible and moves the writer toward the reader" (Schleiermacher, 1813/1992). This is to say, should the translator render the source in the recipients' concepts and world-view, or should the translator require that the recipient work (stretch, learn) to understand – if not the *language* of the source – the *concepts and world-view* of the source? (For discussions, see Benjamin, 1969; Friedrich, 1992; and Krupat, 1992).

This question has had a long and troubling history in translation. Hundreds of years ago, Saint Jerome stated that the translator should approach the source's language in the manner of a conqueror, disposing of the source's language

(and, by implication, of the source as well) as any colonizer might dispose of the colonized.[3] As noted earlier, some theorists in the tradition of colonial studies have analyzed translation as part of the subjugation of less powerful peoples.

Let's take several HCI examples. When we perform a requirements analysis, we make many choices about how we will present the users' work to the development team. We choose whether to write about the components of the work, as seen by the users, or the components of software system or data architecture, as seen by the developers (see Floyd, 1987). Now, of course, there is supposed to be a correspondence between these two worlds. However, as HCI analysts have learned repeatedly, the correspondence is seldom perfect, and something is inevitably "lost in translation" (to use a colloquial expression) as the users' world is re-presented in the software developers' domain. The result is often a system that misses at least some of its objectives.

Translation scholars have argued that, in some cases, it is important to maintain the "strangeness" of the source culture when presenting (translating) it to the receiving culture (e.g., Bassnett and Lefevere, 1993; Krupat, 1992; Venuti, 1995). If we think of "strangeness" as a presentation of the users' view of their own work, then this heuristic may serve us (and our users) well in working with our software professional colleagues. But then we are asking our colleagues to "move" (in Schleiermacher's proposition) closer to the users' world view. We need new methods for making this movement easier for software professionals. Contextual analysis and contextual design have made strong claims this kind of translation of world-view for software teams (Beyer and Holtzblatt, 1998), without requiring the kinds of heroic immersions that are frequently recommended in participatory design (e.g., Blomberg et al, 1993).

As a second example, consider the act of design. When the development team creates a user interface, they have the choice of presenting the system in their own (developers') language, or in the users' language. We as designers or

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[3] "The translator considers thought content a prisoner which he translates into his own language with the prerogative a conqueror." And here is Quintilian: "The goal is to surpass the original and, in doing so, to consider the original as a source of inspiration for the creation of new expressions in one's own language…" Quotations are from Friedrich (1965/1992), who appended Nietsche, "Indeed, at that time translation meant to conquer." Nietsche went on to say, "And all this was done with very best conscience as a member of the Roman Empire without realizing that such action constituted theft" (1882/1992).

evaluators have seen many difficult cases when the language was more developer-oriented than user-oriented – in fact, many of Nielsen's heuristics in heuristic evaluation (Nielsen, 1994a) apply to just this sort of failure in translation (e.g., "speak the user's language," Nielsen, 1994a). A frequent response by designers and developers is to provide additional documentation and training, so as to make the system more intelligible to the users.

But do documents and training make the system more intelligible? They do not, of course, literally affect the system in any way. The target of the documents and the training is to transform the users – in a manner of speaking, to make the users more "intelligible" to the system. Returning to Schleiermacher's conception, documents and training are yet more ways to make the users "move" to the software professionals. By contrast, the methods of participatory design and of contextual analysis and design may be used to "move" the software professionals closer to the users' perspectives.

Thus, Schleiermacher's question has direct relevance for HCI. The answers to his question may be subtle. For example, if the system is being created to support an existing activity or work process, then the *users'* language may be critical. However, if the system is intended to create a new environment or a new way of working, then it may be crucial to *avoid* the users' language if that language would imply old solutions or old ways of working. In Muller (1997), I described this choice as the question of a *reference language* for the HCI analyst's work: That is, whose language would be used to make authoritative claims about the problem being addressed or solved by the system. I claimed that, like many of the "ethnocritical heuristics" in that paper, there was no generally applicable answer: Rather, the answer depended upon many factors (but the question should be asked). The answer to Schleiermacher's question depends in part on the purpose of the translation, and on the purpose of the system.

Foreign and Domestic Subjects

A third choice in HCI translation emerges when we reconsider the process of *social construction* in translation and in HCI generally. I argued in the preceding subsections that the HCI worker's choices can have a strong influence on the construction of the "foreign subject" – i.e., the person or group that is being described in the translation. Several theorists have also noted that the *choice* of what to translate – in our terms, the choice of what users or workers to study, the choice of which tasks to focus on – also has a subtle constructive effect (see again Venuti, 1995; see also Bachman-Medick, 1996).

We construct a foreign *other* – the user or users – whom we present to our domestic recipients (e.g., the development team). In most work settings – and in HCI as a discipline – certain categories of users or workers appear as obvious subjects for our analyses and our translations. These apparently obvious subjects establish a set of norms of

translation choices. For example, we often study knowledge workers in a relatively sympathetic manner (e.g., Kidd, 1994). However, our studies of less privileged or lower-status workers are often less sympathetic, and tend toward different outcomes (for review, see Muller, 1999). When we are able to make choices in whom to study, we may choose to support these established norms of whom to study, or we may choose new and less obvious subjects, leading to new understandings of human work and of the ubiquity of knowledge-work among people in diverse jobs with diverse status levels in their organizations (e.g., Muller et al., 1995).

Where does HCI Translation Occur?
The last choice in HCI translation that I want to raise in this paper is concerned with where translation takes place. At first glance, this choice appears to be a repetition of my earlier question ("who moves?"). I intend something different here. Consider the example of a software development team that works on a project for a specific group or category of users. The HCI work (i.e., the translation) can take place *within* the development team (treating the users as outsiders or *others*), *within* the users' workplace and organization (treating the development team as outsiders or *others*), or at a boundary or frontier *between* the two organizations (encouraging dialogue between the different perspectives of users and developers) (Muller, 1997).

Many HCI methods have been concerned with situating the HCI work at a "good" or even "best" place with respect to these boundaries (e.g., Beyer and Holtzblatt, 1998; Schuler and Namioka, 1993). Translation theory can again aid us in thinking about these choices. In addition to the Schleiermacher question ("who moves?"), translation theory offers us several concepts of boundary work. Krupat (1992) developed the theory and practice of ethnocriticism, a rich set of concepts and high-level practices toward maintaining cultural awareness on both sides of a boundary or frontier between cultures (or, for HCI, between work practices). Berman (1995) advocated a constant movement back and forth between cultures. Based on the influential cultural critiques of Bhabha (1994), Bachman-Medick (1996) suggested the deliberate construction of a novel, uncategorizable space for communication that could exist *between* the cultures – a "third space" (e.g., Evanoff, 2000) that partakes of some of the attributes of each of its neighboring two cultural spaces. This hybrid third space has the interesting properties of belonging to neither source nor recipient, of containing and fostering multiple perspectives (Krupat, 1992), of allowing all concepts to be questioned and re-evaluated, and of encouraging the formation of new, hybrid concepts. I recently analyzed a large collection of participatory methods (e.g., workshops, story-telling, dramas, photo-documentaries, games, and non-technological prototypes) in terms of their ability to create such a hybrid or third space, focusing on the creation of highly intelligible media that become opportunities for

interpretation, explanation, and subsequent representation in support of system design and development (Muller, 2003).

CONCLUSION: REFLECTIVE HCI THROUGH TRANSLATION THEORY
In this position paper, I have applied selected concepts from cultural critique and translation studies to problems in HCI. I have found these concepts useful over the past seven years, in negotiating some of the epistemological, ethical, and political challenges that are a necessary part of HCI research and practice. HCI is, by its nature, a kind of interdiscipline – an evolving, improvisational hybrid space of its own, among more established traditions of software engineering, formal requirements analysis, behavioral science, and social science.

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