

Designing for a Dialogic View of Interpretation in Cross-Cultural IT Design

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Abstract. To search for ways of better communicating the intended meanings to culturally diverse users, this paper uses Bakhtin's concept of dialogicality and its application to examine how interpretation functions in cross-cultural design. It argues for a dialogical view of interpretation based on the genre notion with its features of situatedness and dynamism. This view of interpretation connects action and meaning in cross-cultural IT design and makes a design appealing to a local context without stereotyping the local culture in an essentialist fashion.

Keywords: interpretation, genre, dialogicality, cross-cultural design.

1 Introduction

Interpretation is a central issue in HCI design ([21]), particularly in the area of cross-cultural design. As Bourges-Waldegg & Scrivener ([6]) points out, designing for culturally diverse users is “a problem of communicating the intended meaning of representations” (p.299). The completion of design goals depends on whether local users are able to interpret meanings mediated by a technology in their own contexts as intended. However, current cross-cultural IT design practices face two problems of interpretations.

First, there is a conflict between a preferred interpretation based on one mental model from the development phase and multiple interpretations derived at the localization phase. In a common cross-cultural IT development cycle, designers develop core functionalities based on a mental model which comes either from user studies or from designer's imagination, and then localization professionals customize interface features for targeted users in various locales. However, top-level interface features are closely connected to the user model and its derived functionalities on the bottom level. Since sociocultural contexts tend to be overlooked in IT design practices, low-level tasks distilled from sociocultural contexts are usually modeled in design rather than high-order processes and more meaningful activities embedded in the local context ([17]); design generally aims toward one preferred interpretation ([20], [21]) based on one mental model representing those low-level tasks, wherever the user is situated. Thus it is doubtful how effectively all the interface alternations, coming from the same—possibly problematic—mental model, could lead to multiple interpretations.

Second, the models of cultural dimensions are usually applied to the localization process in a narrow way, and designing for a local culture might fall into a pitfall of

stereotyping the culture. As a popular design approach, cultural dimensions are employed to guide processes of internationalization and localization. These cultural dimensions are built on well-developed intercultural communication theories from scholars such as Hofstede, Hall, and Victor. While they help designers to focus on “the regularities between cultures” by reducing “cultural differences to a manageable number” ([11]), they usually only represent dominant values in a national culture and ignore other subcultural factors. Furthermore, most of these variables are value-oriented, and they do not attend to concrete cultural realities, including the messiness and complexities of local contexts or concrete user activities.

Both problems indicate a disconnect between interaction and interpretation that hurt design outcomes. It causes poor user experience, culturally. The reality is that miscommunication would occur on various levels, ranging from a small icon which brings about unexpected interpretations, to a simple task that might not make sense at all to users who do not share the mental model. This paper tackles this problem by examining the dimension of interpretation in cross-cultural IT design. It argues for a dialogical view of interpretation based on the genre notion. This view of interpretation connects action and meaning in cross-cultural IT design and makes a design appealing to a local context without stereotyping the local culture in an essentialist fashion.

2 Disconnect between Interaction and Interpretation

Though being envisioned as a central issue in IT design, the mediation of meaning has been a weak area in practices. IT design tends to prioritize interaction over interpretation, and thus designing for the mediation of action usually precedes designing for the mediation of meaning in practices. This often leads to use breakdowns when only tasks are modeled in design without considering other social and cultural factors in user contexts. When users and designers share a similar sociocultural context, this problem does not appear obvious since users are able to interpret implicitly the artifact, deeply rooted in local cultural practices, where designers are situated, and use it even though meaning might not be adequately considered in design. However, users do not have this luck when they are distant from designer’s culture. If meaning and cultural factors are not carefully studied and attended to in design, serious breakdowns will occur.

Due to the tendency of representing low-level tasks in IT design ([1], [16], [24]), generally low-level tasks from a particular cultural context (typically an American culture) are represented and modeled in cross-cultural design. This causes the following problems: The designed technology only supports low-level actions rather than high-order activity; low-level actions that are packaged in cultural metaphors originating from the cultural context of designers are confusing or even unrecognizable to users from another culture who are unfamiliar with the cultural practices associated with metaphors. The low-level actions usually represent the cultural ways of doing certain daily tasks in one cultural context, and these everyday practices might be vastly different from users in other cultural contexts. For example, research shows that American people prefer to see things or phenomena in parts rather than in wholes, whereas Chinese would prefer to do the reverse ([26]). In the case of a simple application such as an address book, though it is very common and natural for American

users to group contacts in categories of work vs. family vs. friends, some Chinese users might find it uncomfortable to classify their contacts in this way. Their contacts usually form a big and complex *guanxi*, or network, and it is hard to separate contacts into family, work, and friends. Similarly, while the yellow file folder icon of the Windows system is explicit for American users who use manila folders to organize files in their daily lives, it causes confusion for users in another culture who have not used or seen a manila folder before, for example, some European and Japanese users ([13]).

The disconnect between action and meaning on low-level tasks can be compared to the example of structural differences across cultures in a writing genre such as business letters. Though aiming for the same goal of reaching a potential customer, an American business letter would go to the topic right away while a letter from Japan would establish long-term relationship first and then refer to the business opportunity towards the end. If we believe that an effective business letter to a Japanese customer should follow the rhetorical moves of Japanese business letters and think in a Japanese way, why do designers keep designing technologies for users in another culture by following the rhetorical moves of their own culture?

Two types of breakdowns occur in this situation. First, there is an incompatibility between user expectation of the high-order activity and low-level actions represented by functions. Dunker ([9]) discusses how the seemingly universal and simple library classification systems originated from Western cultures are incomprehensible to Maori users in New Zealand. The collectivist Maori culture values shared knowledge among group members and approaches information and knowledge in its unity. When Western library classification systems divided the high-order activity of learning about a Maori tribe genealogy by searching for a related book into the low-level actions of locating the book's subject heading, publication format, volume, and issue number, Maori users got lost in a digital library. Second, there is a conflict between the meaning conveyed through low-level program functions and the local meaning. In the case of file folder icon, a yellow file folder icon does not suggest the filing practice to a European user but appears only as a yellow rectangle. This user would expect to see a cardboard box he uses to hold files. Furthermore, the "local" here does not stop at the nation/state level, depending on target users. In some cases, the local would go to the community and even the individual level for a sub-culture. However, many times local meanings are plagued by discourse hegemony that lacks respect for individual subjectivity, which makes the breakdown of local meaning even worse.

For fixing use breakdowns, some might argue that it will not be difficult to replace an American file folder icon with a European cardboard box, a Chinese file envelope, or another cultural metaphor meaningful to a local culture, but how about making task representations transparent and meaningful to local users, in the case of Maori digital library users? Action and meaning is more intertwined in cross-cultural design, and we need to look for better ways of fusing the material and the discursive, as well as integrating implementation and interpretation in local uses.

3 Dialogicality

To search for ways of better communicating the intended meanings to culturally diverse users, I use Bakhtin's concept of dialogicality and its application in technology

design, cultural psychology, and rhetorical genre theory to examine how interpretation functions in cross-cultural design. This section introduces the dialogical worldview first, then discusses how a dialogical approach connects actions and meaning, and cognition and meaning in technology design, and explores technological artifacts as instantiations of genres informed by this dialogical methodology.

Dialogicality and dialogic interactions is the cornerstone of Bakhtin's philosophy ([3], [4]). Built on his studies in speech genres and social language, Bakhtin believes that nothing is isolated in the world, and any unity is accomplished dialogically. McCarthy and Wright ([14]) state that Bakhtin's dialogical worldview and his exploration of everyday meaning-making experience of individuals is valuable to user experience design because this dialogical worldview connects action and meaning through "intoning": "[Bakhtin's] approach to activity is to focus on how individuals intone acts of living and knowing. By 'intone' he means how individuals make acts their own, how they make them unique, personal experiences through the particularities of interpreting, feeling, and making value judgments and distinctions that are ethically worthwhile" (p.56). Informed by this dialogical methodology, they argue for a holistic approach of experience that is "lived, felt experience as prosaic, open, and unfinalizable, situated in the creativity of action and the dialogicality of meaning making, engaged in the potential of each moment at the same time as being responsive to the personal stories of self and others, sensual, emergent, and answerable" (p. 184). In this regard, users are part of the design process, and there is a more robust interaction between designers and users. The dialogical view of technology design is both material and interpretive, and actions and meaning are treated in a holistic way.

Cultural psychologist Wertsch ([25]) interprets Bakhtin's dialogical approach of meaning is "an active process rather than a static entity" (p. 52). He found Bakhtin's dialogicality is instrumental to integrate meaning and cognition: "human communicative & psychological processes are characterized by a dialogicality of voices" (p. 13). In his studies of language use in the schooling practices, he appropriates Bakhtin's social language and speech genres to illustrate how the influences from the sociocultural setting shape the development of individual psychological process. He is interested in exploring "why certain forms of speaking and thinking (voices) rather than others are invoked on particular occasions" (p. 14), more specifically, "why a particular voice... is 'privileged' in a particular setting"(ibid). Here "being privileged" suggests "being more appropriate and efficacious than others" (p. 124). Though Wertsch did not examine technology as meditative means in his studies, his findings are insightful for the HCI field. User modeling based on cognition has been a driving force in HCI design, but it is not well connected with the interpretative aspect of actions. Usually the two aspects have been treated as two parallel factors that overdetermine a design. On the other hand, as universalistic approaches of cognitive models overshadowed other cognitive approaches in HCI designs for a long time, particularly during the 90s, the sociocultural situatedness of cognition was ignored. Accordingly, user models based on a universal and individualist design philosophy have caused many problems to cross-cultural IT design, as discussed in the previous section. So when Wertsch illustrates the sociocultural situatedness of mediated action (i.e., user tasks accomplished with an IT) in a convincing argument with Bakhtin's notion of dialogicality, it shows us possible ways of connecting user modeling to the interpretation on the top level. Furthermore, his interest in studying "why a particular

voice [...] is ‘privileged’ in a particular setting” (p.14) shares with one of the central goals of rhetorical genre theory.

Rhetorical genre theory attends to textual and contextual regularities, repeated actions, and technological influences, both across texts and across practices by examining social exigencies of genres ([8]). Erickson ([10]) has a concise summary of genre as below:

“A genre is a patterning of communication created by a combination of the individual (cognitive), social, and technical forces implicit in a recurring communicative situation. A genre structures communication by creating shared expectations about the form and content of the interaction, thus easing the burden of production and interpretation.”

Though genres are usually classified by their distinctive textual features, genre theory is more interested in genres’ functions and in the interactions between functions and texts. Social practices represented by generic features are what attract researchers to study genres. In IT research, the definition of genres is expanded from textual ones to artifact categories (e.g., [7], [22], [27]). As genre theory brings a peculiar lens to typified human activities through the mediated artifacts, it has been widely adopted in the fields of HCI, information studies, and technical communication. For example, Anderson ([2]) claims that “user studies [in library and information studies] would be genre studies” (p. 342).

Genres are the outcome of typified human activities. According to Spinuzzi ([22]), genres imply a worldview, an understanding of a certain human activity and what it values. As patterns of typified human activities, genres are always associated with surrounding situations. The situation here should not be narrowly interpreted as a task context, but instead, it is a local context layered with multiple sociocultural factors. Spinuzzi stresses that genre’s role as tradition in technology design. Drawing on Bakhtin’s dialogic worldview, he states, “genres are the result of an ongoing dialogue among speakers in a particular sphere of activity, and the past dialogue of those speakers imposes itself on present speakers in ways that they might not even recognize” (p.43). In this view, genres are value-laden artifacts situated in a particular sociocultural setting: They are “traditions of producing, using, and interpreting artifacts” and “traditions that make their way into the artifact as a ‘form-shaping ideology’” (p.41). And an individual artifact is “an instantiation” of a genre or multiple genres. In his study of traffic workers’ textual mediation practices in a state transportation department, Spinuzzi scrutinizes traditional paper forms and web forms as different artifacts instantiated for the same genre, more accurately, for the same activity of logging traffic accidents.

At the same time, as the outcome of “an ongoing dialogue,” genres are never stable. Genres change as activities change. Berkenkotter and Huckin ([5]) describe genres as “sites of contention between stability and change. They are inherently dynamic, constantly (if gradually) changing over time in response to the sociocognitive needs of individual users” (p.6).

Here, the genre notion with its features of situatedness and dynamism helps us to see, in the arena of cross-cultural design, why certain instantiations of genres, certain voices, and certain interpretations are privileged (i.e., accepted) in a local context, and why other forms are rejected.

4 A Dialogic View of Interpretation

A dialogic view of interpretation based on a genre notion provides an essential clue in understanding the use of technological artifacts in a sociocultural context and in investigating how the connection of design and use is dynamically settled in different interface features by inquiring about rules and habits related to genres in cross-cultural design ([7], [22], [27]). For example, a structured layout on a German website and vibrant colors on a Brazilian website reveal different local reading habits and visual preferences through their different generic features.

The dynamic nature of genres shows the possibility of fusing action and meaning through a structuration process that occurring around genres. Influenced by Giddens' structuration theory, Miller ([15]) suggests genres are capable of reproducing social structures with their recurrent nature in situated communication. Orlikowski ([18]) further describes that social structures are not embodied in technology genres, but are "only instantiated in practice" (p. 406). Recurrent interaction with a technology "produces and reproduces a particular structure of technology use" (p. 407). She names this as technology *enactment*. The process of enactment asserts that technology use is socially and culturally determined, and thus generic features of a technology carry meanings and enhance culturally situated actions and local practices. Laundry practices vary greatly across the globe, for example, how to take care of 18-foot-long saris made in fine cotton or silk is a big concern for Indian housewives while Brazilian housewives believe a pre-soaking is important to achieve a clean wash. Thus a popular washing machine in India has a specially designed agitator that does not tangle saris, and a Brazilian model includes a soak cycle to accommodate local preferences [12].

A genre view connects various levels of contexts in one artifact as the structuration process impacts on different levels: from individual through community then through the society level. A decision of adopting and using a technological genre is not only an individual decision based on the user's identity, lifestyle, subjective experience, and other individual factors, but also related to a discourse community where people share similar interpretive conventions about a particular genre and a particular communication activity. Moreover, the values of that society will be reinforced in this adoption process. Spinuzzi describes genre as "an integrated-scope of unit of analysis" ([22]): On the macroscopic level, genres are "shaping and being shaped by its sociocultural milieu as social memory" (p. 44); on the mesoscopic level, genres function as a tool-in-use, "typically taken to be instantiated in an artifact" (p.46); on the microscopic level, genres represent "a coherent collection of habits" and "a set of operationalized actions" (p. 46).

In the case of business letters, the practice of business letter writing is disciplinary and culturally oriented. As an important component of global trade, it is deeply related to various ways of how people do business in local culture on the macroscopic level. On the mesoscopic level, different technological artifacts serve as various instantiations depending on local needs, for example, they can be traditional letters, faxes, and email messages. In this case, a genre view makes us be aware of what voice is "privileged" in a community as Wertsch suggests. On the microscopic level, a typical American letter has the following generic features including letterhead, date, inside address, salutation, body message, complimentary closing, and signature blocks. These features serve as a formula and direct a proficient writer to complete routinized actions in a task context.

With this cross-scope flexibility, a dialogic view of interpretation in cross-cultural design would not just stay at the level of national values, but would dig further into rich contextual factors through the community level to the individual level. It will look at these issues ranging from “How should I accomplish this task with this technology?” to “What does this use activity mean to me in my social group or in my professional community?” to “What role does this technology play in shaping my personal life and my social identity?”

Regarding generic features as affordances, this dialogical view demonstrates how technology affordance comes from the milieu of the artifact, user, and activity. During the structuration process, structuring forces and social habits (i.e., rules) are clustered and instantiated in a technological genre (i.e., tool), solidified as generic features. A genre view of technological artifacts is crucial to technology affordances because it helps interpret an artifact’s use in context by providing socially constructed interpretive conventions. These generic features are affordances, which unfold in this praxis of use and develop as a result of the interplay of habituated uses and sociocultural factors. In this case, a Korean refrigerator does not only refrigerate or freeze food, but also ferment kimchee, a pickled cabbage serving as a daily staple on Korean’s dining tables.

Users play an important role during the heterogeneous co-constitution of technology across a transnational stage. As part of a dialogical structuration process, a technology-in-use is a response to local conditions. Indeed, the practice of technology use is a dialogue between the user and the technology, the technology and local conditions, and the present and the past. Generic features emerge dynamically due to the enactment. Therefore, design is to start and initiate a dialogue, and it is user’s task to respond and complete the dialogue. The success of Twitter does not only belong to designers but also to users. After designers noticed Twitter users would refer to fellow Twitterers by name like this: @TwitterID, they incorporated it in design. The same case applies to user convention such as “RT” (retweet) [19].

The characteristic of dialogicality also sheds light on how cultural dimensions affect a particular IT design and use. The emergent feature of affordance manifests in cross-cultural design. The same technology could enact different technologies-in-use in different local contexts in the process of articulating multiple interpretations, and thus we need to design corresponding affordances for them. For example, when mobile text messaging is found to be used to conduct long conversations in one culture and for small talk in another culture ([23]), we would want to design different interface features to support these different user tasks.

Understanding the dynamism of the technology enactment process shows the possibility of avoiding the pitfall of stereotyping local culture in cross-cultural design. If cultural patterns are utilized in a dynamic fashion to explore the enactment process, then we will be able to stay away from reducing concrete culture into static patterns and negotiate diverse interests from different parties and communities into one artifact. To design a technology is to immerse oneself in a local context and understand the socially and historically developed, typified activities related to that technology.

5 Conclusion

My goal in this paper is to argue for a dialogic view of interpretation that connects action and meaning in cross-cultural IT design and makes a design appealing to a

local context without stereotyping the local culture in an essentialist fashion. After showing how a dialogical view of interpretation functions in cross-cultural IT design, the issue here is how we could develop a dialogical rhetoric to facilitate conversation between the local and the global and between designers and users, and to initiate and sustain multiple interpretations. Further questions need to be explored in this area. For example, it is possible that certain genre is simply not fit in a certain sociocultural context which does not have that situatedness, or there is an inherent conflict between local structure and the new structure introduced by a technology. And even there seems a fit, designers need to be aware of whether the design has enhanced or altered local structure. For those emerging technologies, it is always important to locate previous instantiations of the genre for the shared activity.

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