The English Project:
Function and Error in Media Research

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Abstract

This paper is based on the analysis of observational data collected in a primary school in Beijing (PRC) in 2001. An English language CDROM, designed in WA but in collaboration with curriculum workers in China, was tested on students for functionality, pedagogical effects and communicative success. The findings showed mixed results. Children enjoyed the medium yet were critical of both the content, and various aesthetic and narrative design choices. The analysis offered here argues that in usability studies communicative success tends to be measured through technical fluency. However, we found that the errors noted by the children arose due to a dissonance between culturally found ed design intention and user intention. We suggest, therefore, that an error can be a positive contributory factor to functionality. Error in our argument is equivalent to the quintessential moment of agonistic recognition in ‘democratic’ communications. The value of error lies in the making-visible of difference, a necessary precursor to self-recognition, the recognition of others and of negotiation. While the primary result of error may be to alter some aspect of the software or interface (a means to an end), a secondary effect for the phenomenologist and cultural theorist is an end in itself—the ‘visibilising’ of one’s own difference.

Key words: Early childhood education, English as a Second Language, Educational technology, Computer-assisted instruction, Multicultural education

Introduction

This paper uses observational research data collected in a Beijing school in 2001. In an attempt to describe the use of functionality as a measure of communicative success, we build on a theory of cultural function, intentionality, and the visibility of difference as co-determinate in the production of culturally specific and computer-mediated meaning. ‘Function’ is used here to describe the ideal state of a human-computer interaction, building on the notion that cultural functionality assumes
that an interaction is fluent and has superceded the problems of cross-cultural and cross-generational translation. 'Intentionality' refers to the presence of human agency and intent in the creation of meaning. Although a statement of the obvious, we feel that it is necessary to reiterate that whatever the slips between communicators, there are bases for perfect communicative possibility which have to be located and exploited in each communicative speech act. An invisible communication occurs within a field where such intentions are more or less common (hence later we will talk about the invisibility of culture), whereas cross-cultural errors are likely to be visible and need to be re-invented through intentional and active re-manipulation of the communication in question.

The outcome of this argument reiterates the observations of many philosophers and social analysts of phenomenological bent (Merleau-Ponty, 1962; Ihde, 1998; Verran, 1999; Featherstone & Burrows, 1995; Welton, 1998), as well as tying in with the trajectory from Hannah Arendt (1956) to Garnham (2001), that insists on intentionality and action in the process of meaning production. However, our argument also suggests that there is a reverse process of recognition in operation here, where the invisible relationship between a single user and a computer-based product is made visible through the matching or slippage between intentionality and comprehension. We contend therefore that the level of cross-cultural functionality is embodied by the user and that mediation between computer and user becomes visible in satisfaction, frustration and (in)competency. This is especially useful in the pragmatic application of technology and design to address the educational needs of target groups in cultural arenas and media-spheres other than those of the media producers themselves. Visibility is linked to error, and invisibility to cultural function. We therefore suggest that intentional cross-cultural functionality is a core competency in the production of international media software.

**The English Project – background and methodology**

The English project was a joint initiative between Australian educators and Tsinghua University in Beijing. It aimed to develop usable computer software (CD-ROMs or latterly media kiosks) to help second language learning and to enhance computer literacy in the primary school sector in the PRC. Seeding work was carried out in Western Australia and Beijing in early 2001, using a software games package ‘English’ developed at Murdoch University and based on an English textbook series written by Professor Wenfang Fan at Tsinghua. The game was tested on a mixed age group of NESB Chinese students at a primary school in Fremantle WA, and with first-graders at a primary school in Beijing. This paper elaborates on our findings at that preliminary stage of the research.

The project identified a need for cultural sensitivity in the production of interactive English language learning tools that would be deployed in schools outside what may be broadly described as a Westernized education system. The research also aimed to test current theories of embodiment and digital environments in an immediately pragmatic context. In examining the way in which games are used by children in the Chinese classroom, the research opens up a debate on the degree to which current theories assume Western notions of subjectivity and corporeal experience in their elucidations of single and group operations in an on-line or virtual mode.

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1 The designer of the prototype was Brogan Bunt. The educational designers were Sue Ledger and Wenfang Fan. Donald was project leader, with Ingrid Richardson and Wang Qian as Senior Research Assistants. The project was funded by a Small Murdoch Grant (2001).
The focus on children is important as this type of advanced digital-cultural theory tends towards considerations of adult experience and adult bodies (Morse, 1998). To work on a child-centred project has allowed us to marry the existing work of psychologists (Vaughter, 1997), educationalists (Amory et al., 1999; Yuji, 1996) and media analysts and designers (Jenkins, 1993; Soloway, 1991; Nakamura, 1999; Bobick, 2000) with this phenomenological and corporeal trend in cultural theory. As Williams and Bendelow (1998) note, it is only recently that gender theorists and child sociologists have begun to focus on the significance of body matters in the meaning-making practices of children. Most importantly, for our own work on human-computer interaction in the context of childhood EFL learning, they argue that childhoods and bodies are configured in part through an unending, mutually constituting interaction of a vast array of material and non-material resources (Williams & Bendelow, 1998), thus foregrounding the centrality of modes of embodiment and the techno-material environment in childhood development. Yet while there has clearly been an imperative for pedagogy to take account of techno-media effects on literacy and language learning, there have at the same time been recent attempts to deal adequately with issues of cultural and linguistic diversity. Cope and Kalantzis (2000), for example, describe their commitment to the Multiliteracies project and the ongoing work of the New London Group – eleven educators and researchers in literacy pedagogy, who confront the escalating diversity of both communications media and cultural/linguistic specificity with the demand that open-ended and plural literacies are needed. We suggest, then, that an interdisciplinary approach to our case study – one able to account for the specificities of bodies, technologies and cultures – might enable sophisticated and productive conceptual results, allowing cultural studies and media analysts to uncover a different set of questions raised by virtual embodiment and computer mediated communications.

Human-Computer Interaction: Beijing 2001

Visual text as a category of pedagogy has recently been ‘rediscovered’ (Anstey & Bull, 2000; Lankshear et al., 1997; Matthew, 1997). As modes of communication become increasingly transmedial and interactive, however, children can become highly competent ‘visual consumers’ before entering the classroom, developing multiple – albeit uncritical – literacies across a complex array of image technologies. In this, the Multiliteracies project has been significant (Cope and Kalantzis, 2000), tying in with coterminous debates on multi-literacy and multi-culturalism, much of which has developed alongside moral debates on equivalence, linguistic philosophical work on difference, and political accounts of democratic access. However, notwithstanding the newness of visual literacy in its cultural and media context-dependency as an educational category outside history training, the past decades have also seen a vast amount of academic and media debate on the nature and uses of looking, visibility and representation in both film and television. Most of the key points in these have found their way into school curricula through media studies, re-versioned literary studies, and into school yard culture through the deepening self-parodies of popular media.

In his work on human-computer interaction (HCI), Gary Berg (2000) provides a useful bridge between cultural-media studies and computer literacy work. Berg describes HCI as ‘concerned with the design, evaluation, and implementation of interactive computer systems for human use’ and suggests that the ‘primary factors considered in human-computer interactions are organizational, environmental, cognitive, task, constraints, and functionality’ (Berg, 2000: 351). He emphasizes the importance of end-user application ‘usability’ as the desirable value system of HCI software, and the identification of error as the criteria by which this value system is applied and monitored. Errors are
broken down into three categories: skill-based, rule-based and knowledge-based. In the following
analysis of our Beijing project, we will employ a model based on these frames of reference, albeit
with some modifications. We move through cultural assumption (invisibility) on the one hand and
error articulation (visibility) on the other. Importantly, there are no negative presumptions in our
model. The main thrust is to emphasize the converging dependence of naturalised understanding
(cultural embodiment) and usability errors (difference) on the ideal outcome of cultural functional-
ity. Error, however, is not the malfactor of the user – it is rather the dissonance between design
intention and user intention – which are culturally situated and should therefore expect error as a
positive key to the process of development and function. Error in our argument is equivalent to the
quintessential moment of agonistic recognition in democratic communications. We suggest that the
value of errors lies in the making-visible of difference, a necessary precursor to self-recognition, the
recognition of others and of negotiation – whether that be carried through in design, pedagogical
practice, or technological re-thinking. It is not so much a question of learning from your mistakes, as
of learning what your mistakes are through the apparent mistakes of others. In fact, an approach,
which as we have suggested must account for the specificities of bodies, media and cultures, must
also work to re-theorise the connotation and interpretation of the term ‘error’ itself. In the context
of our project, error functions more as an important revelatory process, making apparent the ‘invisi-
bilities’ of culture, be they environmental, hermeneutic or corporeal, or indeed combinations there-
of. Error works as an unexpected but nevertheless collaborative outcome reflecting the various
intentional specificities of designer, user and software/interface. While the primary result of error
may be to alter some aspect of the software or interface (a means to an end), a secondary effect for
the phenomenologist and cultural theorist is surely an end in itself – the ‘visibilising’ of one’s own
difference.

A Phenomenological Turn

The making visible of difference, as embodied in the intentions of designer and user, and commu-
nicated through HCI, is a phenomenological turn. Founded by Edmund Husserl in the early 1900s,
phenomenology initially set out to elucidate the structures of experience. Following this, the exis-
tential phenomenology of Martin Heidegger and Maurice Merleau-Ponty sought to describe being-
in-the-world as comprised of an interconnected system of equipment, social roles, and purposes or
intentions. In particular – and of particular relevance for our project – Merleau-Ponty stressed the
role of the body in all human knowledge, and the mutual imbrication of technologies (or tools) and
bodies in the processes of knowing and perception. Through detailed analyses of perceptual experi-
ence, he argued that the relation between self and world is conditional upon one’s corporeality or
embodiment. In short, understanding and knowing is inseparable from perception, and in turn per-
ception is inseparable from the particularities of one’s body.

Although Merleau-Ponty did not attend to the cultural and contextual specificities of embody-
ment, there are a number of recent theorists extrapolating from his work that do. Gail Weiss (1999),
for example, reflects on the ways in which corporeality is experienced differently according to sex,
race, ethnicity, age, class, disability and technological environment. In particular, she draws our
attention to the historical, social and technological contingency of embodiment. These insights
underpin our own observations of error and functionality in the embodied experience of HCI, and
explain how in their use of the English Project CDROM the children revealed a sense of the shared
‘corporealisation’ of recognition and cultural justification, their embodied reactions sustaining the
specific cultural and mediaspheres which they inhabit.

Our approach might also be characterised as cultural phenomenology, a hybrid methodology developed by Thomas J. Csordas (1999) theorising a complementarity between the ‘embodied immediacy’ of phenomenology and the ‘multiplicity of cultural meaning’ disclosed by the linguistic turn, in such a way that their relationality is a priori. He states: ‘the equation is that semiotics gives us textuality in order to understand representation, phenomenology gives us embodiment in order to understand being-in-the-world’ (Csordas, 1999: 147). For Csordas, central to this method is the juxtaposition of body and embodiment – in the places otherwise occupied by text and textuality in contemporary literary studies: ‘the body, then, as a biological, material entity and embodiment as an indeterminate methodological field defined by perceptual experience and by mode of presence and engagement in the world’ (Csordas, 1999). The indeterminacy removes the embodiment of culture from the artificiality of anthropological genealogies and generic definitions. Embodiment marks a turn towards a theory of culture as invisible from the outside unless through a dialogue of text, corporeal observation and interpretation. Embodiment is thus not necessarily a claim on the whole body in perpetuity. Its always-floating penetration of culture, as we suggest in our case study below, must be an exercise in mutuality between the recognition of error or difference. The embodiment of error is identifiable by physical reactions within the cultural sphere. These might be a laugh of disbelief, boredom, anger or confusion, in the ways in which people of different ages and backgrounds ‘show’ such reactions. We claim that, whilst such moments of recognition (Donald, 2000) do not describe the depth of nature of the error, they are what Merleau-Ponty would describe as a ‘beginning’ (Csordas, 1999: 147) in the process of intentional re-articulation and cross-cultural alignment.

We argue therefore that the paradigms of both textuality and embodiment in Csordas’ sense are necessary conditions in the making of meaning in an audio-visual field. Further, that whilst this necessity translates across human social groups with apparently highly differentiated relationships to the navigation of daily experience, nevertheless the constraints, local and personalised environments, social and technological rules, patterns of cognition, and task typologies make each interaction culturally and locally significant, i.e. specific to particular bodies and texts. These specificities are made visible through the recognition of errors, and human incoherence in the field of interaction. That recognition is clearly culturally and historically contextual at the same time that it is embodied, and thus in itself is meaningful for communication.

However, Csordas’ claims for embodiment as a key component of meaning making can be better understood if taken in conjunction with Nicholas Garnham’s questioning of the concept of culture as it is deployed in media and cultural studies (Garnham, 2000). Garnham (2000: 140) contends that, if culture is motivated both by ‘the intelligence of human agents’, and by ‘the mode of persuasion’ (which Garnham characterises as ‘shared belief systems’), then culture is everything – and nothing – in terms of analytic value. Instead he offers an approach to mediated culture that emphasises function and intentionality as the categorical markers of cultural value and achievement. Crucially for this project and this paper, ‘how well we judge something is being done depends on what we think is being done’ (Garnham, 2000: 147). Different functions and human intentions imbue different forms of communication, and the content and aesthetic structures of those forms, with something broadly described as ‘depth’. That depth has to be addressed across a spectrum of enquiry – which Garnham enumerates as economic, social and political – as well as through text-based analysis. We add to this list the observation of symptomatic embodiment of error – the imperfections of communication – in the use of communicative technologies.
Cultural Functionality: Testing for Error

Figure 1.
The chart suggests the directive influences inherent in socio-political systems, and the way in which these merge to normativity when expressed in cultural and media production. Based on Majid Tehranian's schema of globalisation and local media systems (1999) the diagram presents the possible (but not necessary) sticking points and locations of error in intercultural design.

Cultural Functionality

In this diagram the left-hand slope enumerates the cultural basis through which the subject (user) negotiates with the computer-based information or game. None of these considerations can be ignored in the design of software, but in a situation of extreme cultural proximity, that is anyway unlikely to happen. Where there are errors (as on the right hand slope) the designer and user can identify their differences — whether it be in actual skills-share, rules adherence or knowledge base more broadly — and remedy the problem with technological or user-friendly modifications. The diagram indicates however the challenge to designers when working across borders; sub-cultural, generational, or multi-/cross-cultural target users are all going to have similar trajectories of possibility and difficulty in their interaction with software. The model's premise is that the embodiment of culture (which is invisible except through the intentionality and actions of a human agent) in the individual qua social group will undermine usability and reduce the cultural functionality of the product unless there is a constant trial-and-error process in its development. Usability lies along the bottom of the diagram, as the achievable end of the spectrum; if the product can be used at all the design
is already partially successful, although its performance may not be anywhere near the ideal sought. The only sense in which usability at the lower end may indicate failure is if it doesn’t get close enough to cultural functionality to be ‘fun’. As we observed in some of our testing sessions, the empirical noise of children playing with a large stuffed toy and a whole menagerie of plastic animals and a few matchbox cars, competed with – but did not disturb – computer users in the same room. Casually, we could observe from this that different forms of fun/play were working in the same space, demonstrating a high level of usability.

On a commercial level all this is just common sense. The developers of the animation game Oz: The Magical Adventure, Dorling Kindersley (2000) noted that when ‘real kids’ used their prototype they complained that certain sections were too easy, and that – for instance – spot the difference games were much harder for adults than children. They did not offer a reason for this but one could surmise that it had to do with childish affinity to detail, to visual fields as a source of new information, and to a commitment to the game in and of itself. All games manufacturers within the international market also expect to ‘localise’ their product for sale into different locations, to avoid insulting, confusing or mystifying their non-domestic customers; modifications which must apprehend the interface between different communities and shared belief systems. The failure to note errors in order to make difference visible is a denial of culture, embodiment and instrumentality as coincident paradigms of intention and action, and therefore of valid social agencies outside the domestic norm.

The notion that the visible is the sum total of the legible, the meaningful and the socially valued (and vice versa) is described by Pierre Bourdieu in his work on photography. In his analysis, the non-representation of ‘expected’ cultural material ultimately renders the form meaningless. There is an experiential spectrum from the feeling of frustration, to the moment of denial, wherein the user concludes that ‘this non-communicative image’ is nothing at all in the world which ‘I inhabit and interpret. Don Ihde’s differentiation between the ‘here-body’ and the ‘over-there’ body as an expression of phenomenological differences the ‘lived’ and ‘seen’ respectively, gives an added dimension to Bourdieu’s point (Ihde, 1998: 351). The ‘here-body/over-there body dichotomy in Ihde’s work refers in part to popularised ideas of in- and out-of-body experience. The former is ‘full, sensory’ and has a range of intentionality referring to the immediately imaginable surroundings of the body. The ‘over-there’ body may be dreamlike, pathological or induced by an excessive reliance on intellect and reason. Ihde draws on the counter examples of the navigational practice of South Pacific Islanders, which ‘makes all motion and direction relativistically referential to the navigator’s here-body’ and the perspectival technology of other navigation methods. There, however, the extreme cross-cultural contrast ends. As the discussion develops, especially if read against Bourdieu’s description of the intentionality of frustration, provoking ‘pure and simple refusal’, the intra-cultural reliance on sensory determinants emerges. It appears that, if the omission of ‘expected’ cultural material renders an image or situation not only meaningless but physically frustrating, as Bourdieu claims, then Ihde’s ‘here-body’ is accessible and necessary to all who require meaning in daily life. The here-body takes responsibility, designs and implements action, and embodies reactions to the world in which it participates. Ihde also picks up on the quotidian parameters of embodiment explored by Merleau-Ponty: extension-through-activity (as in habitual tool use / technology), boundary shifting (through the wearing of clothes / social behaviours), cognitive-experience (memory, expectation, imagination). He thereby notes that visual media are on a trajectory towards a here-body navigation of media; the embodiment of usage, judgement and reactive experience. We can hypothesise then that the technologies connected to the possibilities of distant communications
require not only the embodiment of tool use (best visualised through the ‘mouse’ or desktop in the case of computer use), but are dependent on a continuing, physically experienced evaluation of their cultural functionality.

**Errors: P is for Palm Tree, Purple and Parrot**

Bourdieu’s own example of the frustration of meaning – palm trees as signifiers of the exotic – immediately transgresses the parameters of understanding for readers (viewers) in South-east Asia and Western and Northern Australia. Palm trees are only exotic in these regions in so far as remnant colonial cultural tics survive. In the northern city of Beijing, they would mean almost nothing, probably only just recognisable as trees at all. This is a knowledge-based error but one that must link across to paradigms of historical and aesthetic understanding within a particular (North European) visual field. The errors that we noted in our own Beijing results were in the address to the student (Rules / Knowledge), in the clarity of instructional functions (Skills), in the choice of key objects of study (Rules / Knowledge), and in the perceived intrinsic value of the alphabet (Rules / Knowledge). The difficulty we had in defining our errors underlines the spectrum on which these errors lie, where a knowledge-based mistake ties into a mistake where expected ‘rules’ of the game are not adhered to – and which then frustrate the acquired or desired skill base of the user.

Children did not, for instance, enjoy the alphabet section. At interview, teachers and parents and older children felt that it was not games based, so there was little scope for onscreen manipulation. The alphabet section was designed as a keyboard with pictures underneath. The user clicks a letter to hear the name of the object spoken by the digital companion at the bottom of the screen. Complaints about this section that were articulated were mainly that it was ‘boring’. The children displayed a lack of interest and were unable to say anymore about why this was the case. The here-body ‘boring’ (bu xihuan: mei you yisi which translates as ‘I did not like it: it had no meaning / was not of interest’) captured in words the deliberation and intent with which they clicked out of the section. ‘Boring’ is a word that parents and teachers discourage, as it is deemed to betray laziness, a lack of engagement and ‘not trying’; yet, this situation suggests that the wearying fury of boredom is an intensely here-body sensory reaction to cultural dysfunctionality.

Along with older children, teachers and parents, we attribute this to the problem that the interactivity of the alphabet (a click to hear a word spoken with a matching picture) was not game based and did not enhance any advanced CMC skills. Children did not apparently feel adequately rewarded either by the picture or by the sound of the digital companion’s pronunciation. This may have been partly because neither were sufficiently attractive, and partly because the skills needed to earn them were not satisfactorily testing to the student. Also, children who learn English as a first and often only language, learn the pleasure of ‘containment’ when reciting the alphabet, i.e. the phonetic alphabet encapsulates language in such a way that iconic languages do not, in that all the letters are accounted for; being able to perform every letter gives a sense of semiotic empowerment, a pleasurable ‘knowability’ and a burgeoning confidence in one’s own cultural and linguistic literacy. The negative response of Chinese children (Out of 39 subjects, 2 liked it, all the others left it shortly after entry) indicates that the high cultural value placed on the alphabet in a western school setting did not apply to these children and that the design of the section did not sufficiently accommodate the gap.

The children and teachers also balked at ‘purple’ in the colouring in section. Green, Blue, Red and Yellow were acceptable, but Purple was thought to be a poor version of pink, which is much
more common in other visual material and in the colours of daily embodiment: clothes, toys, lollies. By contrast, they liked the animals section, mainly because there was a hide-and-seek game, the animals were ‘cute’, and because they could manipulate animation features with the mouse and with language games. In these interactions the researchers noted the child’s intense attention as well as spontaneous laughter and utterances of relevant words (‘tiger’ and ‘snake’ were popular whilst ‘parrot’ was problematic as children wanted it to be ‘bird’, a word most of them already knew). Furthermore the monkey, a highly mythologised and familiar creature in Chinese literature and popular culture, was criticised for not looking like a monkey. An opportunity for linking pre-existent knowledge (of King Monkey shu wu kung in Journey to the West xi you ji) was not taken up, losing a whole set of inferences and game possibilities that would have fitted the knowledge base of the students, and complied with the rules of cultural literacy in the Chinese media sphere (i.e. the monkey is always portrayed as a brave transformer and trickster).

**Feelings of functionality**

The relation between aesthetics, embodiment and cultural functionality is supported by social theorists who argue that the feeling of satisfaction (and, by the same token, dissatisfaction) is linked to an ‘equilateral triangle of discourses, institutions and corporeality’ (Williams & Bendelow, 1998: 66). The embodiment of culture through linguistic competency is the most familiar part of this claim. Since the mid-seventies educational theory has been very clear that ‘the child’s language develops along with his (sic) growing conception of things, people, events and the system of values and behaviour which this particular language expresses’ (Garvie, 1976: 3). Furthermore, the observations of social psychologists point to both swift levels of childhood competency and a bias in the literature towards white, middle class child-rearing patterns (Woodhead, et al., 1998: 48).

In the hypothetical Kaluli targeted CD-ROM, there is a high risk of making errors at every turn. The local triadic rules of the language learning game are likely to be broken by non-Kaluli designers; the expectation of one-on-one skills development is also problematic given the role of ventriloquy and complicit role play in Kaluli language acquisition. A similar kind of problem faces the designer of a programme for Chinese schools. Primary schools in the PRC still tend towards full class teaching, seating in rows, large class numbers and an emphasis on pedagogic repetition. There is also a strong emphasis on musically based learning, so much so that lessons without songs are unusual. In our observations this produced children who were both group orientated and yet able to perform for the group as individuals or in small groups. They had no qualms about singing to each other in class, nor about volunteering information and ideas both in the classroom and in the testing suite (a modernised hall in a 1950s built school complex).

For practical teaching purposes there, CMC in this setting needed to be usable as a group activity, to stress vocalised responses as well as mouse- and keyboard-based activities. There also needed to be more flamboyant rewards built into the programme; one grandparent suggested that a red flag should pop up every time a child succeeded in a language activity. Recognising that children prefer mastery over the onscreen situation (competence) more than they desire the pedagogical outcome of the activity (performance) (Broughton, 1985: 107; Garton & Pratt, 1998: 22), grandparents (many of whom carry out most parenting functions at home) wanted the CD-ROM to go the extra mile and make the child want to learn English too.

Hidden in this modification would be an acknowledgment on the part of the non-PRC design team that the existing structure prioritised an internalised individuated ontology of personal order and achievement, a ‘programmatic lucidity’ (Broughton, 1985: 104) and one that is sceptical of flan-
boyance. We need only compare a Tiananmen May Day parade, a new year special on Hunan TV or a Children’s Day concert (Donald, 2001) to the muted public spectacle of North European habit, to remember why the designer may not have waved any flags, preferring the sedate and factual “Yes, that is a monkey”, and why Bourdieu thinks that palm trees are exotic. The ‘invisible pedagogy’ (Broughton, 1985: 105) that this represents needs to be superimposed over the left diagonal in our model of achieving cultural functionality. The issue that these errors of rules and knowledge raises is however an issue of child socialisation and pedagogy, which makes it a tough modification for culturally situated designers or educators to understand and put into practice. Waving the flag is an act of banal nationalism (Billig, 1995) in most nation states, waving someone else’s onscreen in another political zone requires an intentionality fully based on the value system of another, and a recognition of political mores that do not, probably, coincide with one’s own. The feeling that underlines cultural functionality in this instance is based both on pleasure in performance and recognition of nationally located approbation and joy. Red is the colour not just of political correctness in the PRC but also has strong connotations of celebration. It encompasses a whole swathe of environmental knowledges and cognitive practices which locate the child-student in her place and time, and which a non-localised media product cannot emulate without mobilising intentional cross-cultural functionality.

In this respect, however, it is important to note that the attention of individual children working through the CD-ROM was palpable. Individual personalities became apparent as some children sought to ‘help’ students, whilst others fooled around in the hall as they waited their turn. Despite a great deal of boisterous behaviour (from some of the boys at any rate), attention levels of children actually engaged with the program did not waiver. Our overall impression was that, whilst certain errors occurred within the design, the concept of CMC and HCI as a mode of education produced high levels of satisfaction in the students. This was evident through their attention, their spontaneous communications whilst working on the program, and through their enthusiastic but critical responses in feedback sessions.

**Communicative Success?**

The research in Beijing was itself only a beginning. With forty students surveyed over a week we could do no more than note reactions on a one-to-one basis, record their experience of computer programmes and other technological media, note their age and gender, and give them space to play as well as work in the testing suite. The paper then extrapolates the reasoning with which we went into the first stage of a potentially long design process, and to describe how we have been led to reconceptualise the notions of functionality and error in response to the children and the work we shared. Most insistently perhaps, we are arguing for the positive aspects of error as a theoretical tool in the broader field of cross-cultural communications. We suggest that cultural functionality – as revealed in error - is an ideal spectrum, with its own conceptual function, to make difference and incommensurability visible in ways that might allow for change and negotiation in the content of intercultural communications.

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