# Designing for Zombies

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## ABSTRACT

How do different populations present themselves as problematic for design? How do we attribute properties to different groups and single them out as particularly significant. A chance encounter amongst a group of researchers provides an opportunity to think about how HCI constructs its subject – in particular, in the form of the zombie, both that of the Hollywood movie and that of Afro-Caribbean tradition.

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Zombies, undead, users, design, methodology.

## ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

## INTRODUCTION

At the Ubiquitous Computing (Ubicomp) conference in 2009, a group of HCI researchers from several institutions gathered at a lunch table. Some of us talked about how we were soon to attend the annual meeting of the Society for the Social Studies of Science (4S), which that year was scheduled to take place over Halloween. Consequently, the conference organizers that year had chosen "Zombies (and other monsters)" as its conference theme. We joked about the impact of this theme on the conference, speculated about what we might expect at the conference banquet, and imagined what might happen if conferences like Ubicomp, CHI, or CSCW turned their attention to zombies.

Quickly, the conversation turned to zombies as a design population. (It is perhaps inevitable that, for HCI, the most immediate way to make Zombies – or any group – relevant is to imagine that they must be a target for design.) "Wow," said one prominent HCI academic, "that's tough. I don't think I know how to design for zombies. After all, zombies are undead, which means that they are immortal; I don't think I know how to design systems that will last forever."

As the conversation progressed, people around the table contributed a series of challenges posed by the problem of design for zombies. Zombies don't behave rationally, for example; their lust for eating human brains overwhelms cognitive evaluation. Or, again, zombie bodies decay and change, another design challenge. However, as people considered the way that contemporary design practice failed in the face of the problems of designing for zombies, a curious characteristic seemed to mark these challenges – they all apply to conventional human users of interactive systems. The apparently strange and unfamiliar problems of designing for zombies are not strange and unfamiliar at all; they are problems that everyday people face, but, often, problems that we fail to acknowledge, from information systems whose planned or unplanned obsolescence is poorly matched to the lifetime of their users, or those that presume that human bodies and capabilities are unchanging.

I want to take the apparently ridiculous and frivolous idea of "designing for zombies" and show what kind of important lessons it embodies. I want to make three broad arguments. First, as suggested above, I will examine the kinds of problems that "designing for zombies" seems to present, and suggest that they are, in fact, problems that HCI neglects when designing for the living, never mind the undead. Second, I will turn to anthropological literature on voudon and zombies to suggest that our immediate expectations of what "designing for zombies" might mean neglects the social and cultural context within which zombies make sense, with implications for the kinds of rationalities and contexts in which we see design practice. Third, I will connect this to ongoing considerations of the relative roles of social analysis and design practice within HCI as a discipline.

## HCI'S ZOMBIE PROBLEM

Let's start by returning to the Ubicomp lunch table and the conversation there, which turned around the problems of designing for zombies.

The idea of zombies as the theme for an HCI conference was greeted with equal parts glee and dismay. The glee arose from thinking of something so far from our usual experience. The dismay, though, arose as people considered how zombies posed problems for traditional HCI methods. In particular, three objections arose.

The first was that zombies, consumed by their lust for brains, could not be relied upon to act rationally. HCI methods, proclaimed a prominent HCI researcher, depended upon rationality on the part of their users; any evaluation of user interaction patterns, user needs, etc. relied implicitly on the rationality of the user as subject. The lust for brains was irrational and overwhelming; ruled by their passions

and not by their intellect, zombies were outwith the reach of traditional HCI methods (so the argument went.)

However, this argument raises an interesting problem, because it suggests that HCI's traditional methods might have a problem with any users whose actions are not strictly rational. Anyone whose actions do not follow the rules of rationality might as well be a zombie, in this case. And the problem here is that rationality is frequently not a feature of observed human behavior. Behavioral economists, for example, delight in observing the non-rational aspects of human behavior [e.g. 7]. In a different context, Garfinkel [5], documenting the deliberations of jury members, concludes, "The procedure of deciding, before the actual occasion of the choice the conditions under which one, among a set of possible courses of action will be elected, is one definition of a rational strategy. It is worth noting that this rational property of the decision-making process in managing everyday affairs is conspicuous by its absence." In other words, people don't behave rationally. Rationality, for Garfinkel, is an accomplishment of participants in some social occasion, rather than a foundation of their action. Non-rational behavior is not an exceptional circumstance, a deviation from norms, or an aberration to be corrected; rather, rationality is one amongst a series of ways in which we might account for human action. In fact, some such as Ralston [9] have strongly critiqued the Enlightenment tradition that elevates "rationality" to its status as the central pillar of reasoning and decision-making.

What, then, are we to make of the suggestion that HCI methods cannot encompass zombies because they do not act rationally? The statement might cause us to ask how well we everyday humans – the living, not the undead – are catered for by such methods, if rationality is not necessarily in evidence in our own actions. In other words, the problem of the zombie here is really a broader problem; the zombie consumed by lust for brains contains some fragment of ourselves. The first problem of designing for zombies, then, suggests some problems that we might have in more conventional circumstances.

The second problem raised was that, being undead, zombies do not, themselves, die. If zombies do not die, then they "live" forever, which implies that zombies-as-users will be users of whatever technology we provide for them for a very long time. The person who raised this objection noted with dismay that he didn't feel that he could design systems that would last forever.

Building systems that might last forever is indeed a troubling challenge. But, again, we find buried in here a deeper and more immediately troubling concern – which is that the problems of longevity do not require us to invent the fiction of immortality. We can't design for zombies because zombies live forever; but if humans live for seven or eight decades, can we design for those?

What is the temporal reach of our technologies? Informally, many of us are familiar with the problems of attempting to resurrect old data, dealing with the problems of obsolete media, evolving data standards, "bit rot," incompatible software packages, and changing operating systems. Speaking for myself, I have long since lost the ability to run the earliest software programs I wrote, and even those from only a decade ago may be touch-and-go ("write once, run anywhere," they said; but not "run anytime.") Many people will be familiar, too, with the uncomfortable decision, say, to abandon the stacks of CDs once we have digitally encoded our music – betting on the idea that the digital formats will always be playable, just as, once upon a time, we also bet on the idea that CDs would never degrade.

Concomitantly, if as users we are often forced to face the prospect that our data may not be immortal, as designers, we are similarly forced to confront the question of designing for the long term. To what extent do our processes take account of the scale of the human lifetime? To what extent do we make explicit provision not for the here-and-now or for the immediate future, but for the long term, both retrospectively and prospectively? The prominent HCI researcher was worried that he couldn't use HCI's techniques to design for immortality; but what help did those techniques provide for designing even for the quite reasonable idea that we might want systems to be able to last for five, ten, or twenty years?

A third problem was raised. Zombies, being reanimated corpses, are frequently encountered in states of significant decay and decomposition. Accordingly, they are often subject to significant corporeal damage. Fingers, hands, and arms might easily be lost, for instance, particularly in the melees surrounding assaults on the handful of remaining humans. In general, the prominent HCI researcher noted, zombie bodies are subject to change. While we might want to be able to take zombies as design targets, this malleability of the body is a problem. How can we build interfaces when we don't know what kind of body the user will have, or where that body is itself potentially subject to change? The conversation took place at the Ubicomp conference, where body-worn sensors are a common topic of research attention, and where responsive environments attempt to track, model, and interpret the movements and actions of bodies, and so this third problem seemed particularly close to home.

Certainly, again, we are familiar with the remarkably fluid body morphology of zombies in horror movies. The researcher's observation was right on the mark on that score. However, again, we can examine this remark not simply in terms of what is said but also in terms of the distinctions that it draws. Implicitly, it says not just that "zombies' bodies are subject to change," but also, "unlike our own." It is this implicit comparison that might give us pause. Our own bodies, after all, change. They change through the natural course of ageing; they change through pregnancy and birth; they change through illness; they change through traumatic injury. Human bodies come in all sorts of sizes and shapes, and they are not fixed. We gain

weight and lose it; our vision dims; our muscles age. The problems are perhaps not quite as traumatic as those of a zombie whose arm is pulled from its shoulder and then used as a weapon to beat it; but the changing nature of the human body is undeniable. If it is true, then, that HCI methods cannot be applied to zombies because of the changing forms of their bodies, then we might ask again, what of the rest of us whose bodies are also changing?

HCI's zombie problem, then, is an interesting one, and a troubling one. The conversation identified a number of problems designing for zombies, and these problems were indeed significant. But it turns out that there is a little of the zombie in each of us, and the problems of designing for zombies are also the problems of designing for us. Zombies aren't rational; but neither are we. Zombies live a long time; and we do too. Zombies are subject to bodily change; our bodies also grow and age. The problems of the zombie are our problems too, and the problems HCI faces in thinking about zombies are problems that HCI faces more generally. As users, we will face them before we become reanimated corpses; as designers, we face them every day – or we should.

## ZOMBIES IN THE REAL WORLD
The zombies that haunted the Ubicomp conference were Hollywood zombies; blood-stained creatures, their bodies scarred by hideous injuries, ravenous for brains, stumbling through the streets. The very familiarity of this image was what allowed people to engage in an amusing (and, as it turned out, intellectually productive) conversation about zombies around the lunch table. The term "zombie" might, though, have triggered a different image. Zombies are elements of specific spiritual practices, belief systems, and religions in Africa and the African diaspora. Do "real" zombies offer useful lessons?

The figure of the zombie is most associated with the Haitian folk religion known variously as Voudon, Vodou, or Voodoo, itself an import and postcolonial reinterpretation of the religions of Western Africa [1]). Voudon distinguishes between two broad groups of spiritual beings, Rada and Petwo. Rada deities are calm, authoritative, slow, and benign; Petwo figures are quick, animalistic, violent, and powerful. The distinction is not between good and bad, since both act in both capacities; Apter [1] suggests instead that the distinction is between authority and power, with the zombie and the forms of magic associated with the zombie in the second category.

As these studies show, the reanimated corpse of Haitian voudon is perhaps less one that has been returned from the dead but rather signals the return of one who has been separated from everyday life and from social life. Davis [3] – in an account that is, it should be noted, as controversial as it is sensationalist – suggests that the label of zombie is used to explain the reappearance of those who have been, for one reason or another, removed from society (or who have removed themselves from society). If death is an explanation for their disappearance, then zombification is an explanation for their reappearance. Notwithstanding some of Davis' more elaborate claims (mainly focused on the role of tetrodotoxin in voudon zombification ceremonies), there is broader support for the thesis that the death from which the zombie returns is a social death.

The spectral figure of the zombie reflects more broadly the context in which it is invoked. Jean and John Comaroff [2] identify one source of zombie discourse in the African encounter with industrial capitalism and empire. As with Taussig's work in Latin America, the workings of the industrial economy, the literal "fetish" of commodities, and the operation of alienated labor are made compatible with and incorporated into a ritual and spiritual analysis. The immaterial flows of capital, power, and resources are themselves "occult," they argue, and productive of new forms of experience within which mysticism plays a central role. They note that "Because witches distill complex material and social processes into comprehensible human motives, then, they tend to figure in narratives that tie translocal processes to local events, that map translocal scenes onto local landscapes, that translate translocal discourses into local vocabularies of cause and effect."

Most usefully, though, we might shift our attention from zombies themselves to, first, the process of zombification, the circumstances under which it alleged that zombies may be produced; and, second, to the control of zombies, that is, to the arguments and accusations over who keeps zombies. Indeed, by focusing on these aspects, we can discern elements that link otherwise disparate notions of zombies in, for instance, African and Caribbean ritual systems [8].

Taking the first, our attention is drawn to the way that the zombie is produced – that is, what makes a zombie? What is removed, or from what is the zombie removed and to what then returned? Despite the problems suggested earlier, it is not so much reason, perhaps, as power or agency, since the zombie is under the control of another; so our focus might perhaps more be on how one loses agency. Similarly, if the death that the zombie has undergone is a social one, as suggested by Davis, then relationality becomes key. (Indeed, in other contexts, some have argued that so-called "voodoo death" – that is, death by witchcraft – is associated, in many circumstances, with the withdrawal of social support and in consequence material support, that follows the conclusion of family groups that someone is now going to die – that is, it is something of a self-fulfilling prophecy [4].)

Turning to the second consideration, the other figure associated with that of the zombie is the zombie's master or owner (especially in those contexts where zombification is actually a form of labor generation), and so we might turn our attention, as Niehaus [8] does, to the questions of who is accused of making or owning zombies. Neihaus examines accusations of zombie-keeping, finding in the discourses of zombies allegories of power, domination, and

control. While some have suggested that zombie owners are likely to be conspicuously wealthy (the idea being that they have profited from zombie labor), the opposite tended to be true in Niehaus' analysis; accusations would often be made by members of more wealthy households against less well-off relatives and neighbors, and especially against those who do not appear to have the wherewithal (and particularly access to labor in the form of children or family members) to support themselves.

The zombie that we encounter as an aspect of these systems of though, rather than is quite different, then, that that of the Hollywood movie. Although there are wide differences between the notion of the zombie in different places, there are some common features that we might want to bear in mind. Three in particular appear here. The first is that the zombie is ontologically troubling. The notion of the undead is already troubling, of course, but it represents something that is itself problematic – a figure that doesn't make sense, a category that confounds. The second is that it is social status and social relations – including relations to those who make or control them – that make the zombie. The third, following on from this, is that the zombie is a figure of complex imaginings – not just spiritual-religious, but also economic and political, and we need to take a holistic approach to the analysis of the zombie and its meaning in order to understand it.

Which leaves us with the question, perhaps, of what, on the basis of this exploration, we might try to say to people gathered around an HCI conference lunch table?

## CONCLUSIONS

The opinion of the lunch table was that zombies presented problems for HCI. That was right, but the problems that zombies really present are problems of a different sort. Yes, the idea of designing for zombies is patently ridiculous. There are two aspects of this absurdity, though, that we might want to examine.

The first is the broad question of how some populations seem normal and natural as targets of design, while others seem outré or remarkable. For instance, recent CHI conferences have presented papers looking at cloistered nuns [6], convicted sex offenders [10], and Brazilian Pentecostalists [11]. These papers are often met with the question, "yes but why did you study those people in particular?" The significance of the question is found in its unspoken second half – "rather than…" Rather than what? Just who are the "normal people" who are somehow the normal and natural objects of HCI's attention? What makes studies of Brazilians odd, while the American college student continues to be examined in detail?

The second is why "designing for" zombies arose in the conversation in the first place – why the only relevance of zombies for HCI was as a target of design. Might there not be other things to be learned? Might a consideration of zombies actually have some import for HCI, as a discipline and as an approach, beyond the design-use relation? Certainly, it might show us that there are roles for other literatures and disciplines beyond the lessons for design, or that forms of technological engagement might be radically contextualized by religious, social, political, or economic relations, or even that our disciplinary boundaries can become blinkers.

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