

Magical Beginnings of the Mundane

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ABSTRACT

We explore the notion of mundane technology by considering its relationship with magic, a potential opposite. To furnish our discussion, we consider a possible prehistory of the smart house through the example of the nineteenth century home of the French magician Jean Eugene Robert-Houdin. The roots of interactive technology in magical invention are discussed, and the implications for the modern smart house are considered. In conclusion we posit a mutual dependence between magic and the mundane in interactive design.

Keywords

mundane technology; magic; smart house; Robert-Houdin

1. MAGIC AND THE MUNDANE

Our aim here is to reflect on the nature of mundane technologies by considering possible oppositions with notions of magic. If 'mundane' is taken to mean that which is everyday and exists almost unnoticed in life's routines, then 'magic' implies an opposite: something out of the ordinary, something special and startling, something which demands focal attention. To describe a particular artefact as 'magical' is the rhetoric of the technological determinist, the vendor (especially the IT vendor), the eternal technological optimist, or the novice on a favourable first encounter. To call the same thing mundane, in contrast, is the language of a commentator, a contextualist with an eye for well-used and well-appropriated technology.

The idea of technology as magical is endemic to modernity. In Arthur Clarke's much-quoted 'third law' - 'Any sufficiently advanced technology is indistinguishable from magic' (Clarke, 1962) - he congratulates us that a primitive person brought forward in time would be mystified (and impressed) by most of our present-day gadgets. The implication, and widely held lore, is that we moderns have taken for granted our own technoscientific marvels; that we have let them sink into the mundane. Conversely, Karl Marx (1867) talked of a new malaise in industrialised societies of 'magical thinking' that occurs when the consumer is enchanted by a commodity, and no longer experiences it as part of a social relationship with those whose labour produced it. Extending Marx's point to interactive technologies, users might be said to have indulged in magical thinking if they experience an encounter purely with a device; that is, when they trace nothing back to efforts of the designer. For Marx, then, people might need

to be reminded of the mundane ordinariness of technology. For Clarke, they might need to be reminded of its magic.

Bringing this more squarely into the world of interaction design, some researchers emphasis technology's intrinsic magic-like properties. One example is Wright et al's (2006) work on 'enchantment'. Another is Vetere et al's (2006) 'Magic Box' which creates an impossible technology as a research technique to explore its effects on family relationships. Other researchers deliberately shun intrinsic technological properties, and place emphasis on the (mundane) context of use, such as studies of domestic routines in the home (e.g., Crabtree & Rodden, 2004) and its concomitant focus on ordinary unremarkable technologies (e.g., Tolmie et al, 2003; Taylor et al 2007).

But the boundary between the magical and the mundane is shifting and is never clear-cut. Consider Mark Weiser's (1991) vision that pointed us away from the 'dramatic computer' to ubiquitous computing. We might take this as a move from a magic machine to leaner digital technologies weaved into the mundane fabric of everyday life. On the other hand, Bell and Dourish (2007) have argued that continued reliance on a Weiserian vision of a 'proximate future' - one just around the corner - leads ubicomp researchers to ignore the real ubiquitous computing of the present. So Weiser-followers now seem to draw more on the magical - the transformative power of technology - while overlooking the mundane ordinariness of real ubiquitous computing, including its messiness and ever disorderly infrastructure.

In this paper, we explore the relationship between magic and the mundane by drawing insights from stage conjuring, particularly as it existed in the nineteenth century. In one way, this seems like a far-fetched connection for today's interaction design. However, as we seek to show, the conjuror is also a kind of technological designer who aims to create novel effects for a defined population. In the nineteenth century, conjurers worked close to the front of scientific and technological innovation and cleverly adapted its latest achievements in areas like clockwork, electricity and chemistry. In this way there is perhaps a parallel with interaction designers who adapt developments in information technology for deployment in specific social niches.

To focus our analysis we report the case of the french magician Jean Eugene Robert Houdin and his attempt to build (what we might now call) a smart home.

2. THE PRIORY: THE HOUSE OF JEAN EUGENE ROBERT-HOUDIN

Histories of the smart house often trace its roots back to the early decades of the twentieth century in western countries, noting such circumstances as the decline in domestic service in Britain following WWI and the increasing availability of electricity (e.g., Aldrich, 2003; Gann et al, 1999). In this paper we explore what might be called the prehistory of the smart house, meaning experimentation with industrial technologies and techniques in a domestic setting that predate the conventional histories. In particular, we look at one particular fragment of this prehistory: the home of Jean Eugene Robert-Houdin (1805 -1871).

According to Harper (2003: 1), a 'smart home' is smart not by virtue of any architectural cleverness, but because of the 'interactive technologies that it contains'. From his retirement in 1849 onwards, Robert-Houdin filled his house, called 'The Priory', with gadgets and devices of his own making using chiefly clockwork and early electrical know-how. Given that these gadgets were interactive in nature, The Priory fits Harper's definition and so is surely one of the earliest smart homes.

Central to our account is the fact that Robert-Houdin was a noted magical inventor and performer. To emphasize this point, he was widely regarded as the greatest magician of his day (even in England), and has subsequently been lauded as the greatest of all time (Dawes, 1979; During, 2002; Metzner, 1998). We argue that magical inventors, like Robert-Houdin, drew on a kind of technological irony that revelled in twisting the intended meanings of new technologies. Irony and techniques of concealment allowed Robert-Houdin to bring new interactive technologies into the realm of the domestic.

After a short career of entertaining the public and the powerful of Europe, Robert-Houdin retired to The Priory near Blois in 1849 and applied his techno-magical thinking to novel devices for his new home. He was a prolific writer and recorded his domestic inventions in a brief pamphlet, 'Le Prieuré' published in 1867. We now briefly describe some of these.

Of particular interest is the entry gate that was some distance from the main house. First there was a system of bells to help with post collection. A bell in the house was triggered when post had been delivered at the gate, and a bell at the gate rang to tell the postman if there was outgoing post to be collected from the house. Second, there was an arrangement for greeting visitors and learning something about them. When visitors rang a bell, the gate could be remotely unlocked at the house, and a name plaque next to the gate rotated to change its message from 'Robert-Houdin' to 'Entrez'. When the visitor then opened the gate it triggered two bells to ring in the house, each firing at a different point of the gate's arc. As the gate closed behind them, the two bells were each triggered for a second time. The resulting pattern of the four rings indicated something about the visiting party. A familiar person might enter quickly making four rings in quick succession, while a new visitor who lingered in uncertainty having opened the gate would produce two slow rings followed by a long gap before two more.

Inside The Priory, somewhat sinisterly, Robert-Houdin installed a system of alarm-clocks to wake servants, ringing bells that could only be turned off by those affected leaving their beds. The alarm setting was controlled by a central master clock - a kind of early

network arrangement - that allowed all alarms to be brought forward or back if desired. Unknown to the servants, and even more sinister perhaps, their actions of opening and closing some of the doors in the house kept the master clock wound. Other domestic technologies at The Priory were: an automatic timer-based horse-feeder, a temperature-activated fire alarm, and a burglar alarm on windows and doors that was automatically primed at night but inactive during the day. Across his life, Robert-Houdin also created numerous 'standalone' interactive gadgets. These included an alarm clock, patented in 1837, that on being activated lighted a taper for a candle or cigar (a distant ancestor of the Goblin Teasmade perhaps?). Another example was his 'mysterious clock' which presented a glass face and hands that kept good time although they were clearly seen to be lacking any clockwork mechanism.

3. MAGIC AS A FORM OF TECHNOLOGY

To explore the significance of Robert-Houdin's house, we first consider the broader context of stage magic and technology. It is important to note that conjuring in the nineteenth century was a dominant form of entertainment that exploited the latest advances in science and technology to produce ever more amazing tricks: new understandings of electricity and electromagnetism; new materials such as invisibly thin steel wires and larger glass sheets for optical illusions; and the increasing sophistication and miniaturization of mechanical devices (e.g., Steinmeyer, 1999, 2001, 2003). Like other great nineteenth century magicians, notably John Maskelyne in London, Robert-Houdin was a trained clock-maker and accomplished amateur inventor with numerous patents and prizes (e.g., Dawes, 1979; Christopher, 1973).

But success in magic, then and now, rests on more than technological invention. It depends on how technologies are deployed to create effect. This can involve disguising or mis-conceptualising the role of the apparatus. Sometimes it involves cleverly blurring the boundary between the apparatus and the actions of the performer. It is here, in the deceptive deployment of technology, that Robert-Houdin appears to have excelled (Steinmeyer, 2003: 139). We interpret this as a deep sense of technological irony. His 'mysterious clock', for example, seems to poke fun at technology declaring itself unnecessary.

Our contention is that Robert-Houdin's domestic inventions take the form of magic tricks, and we argue that this is significant for the incursion of interactive technology into the home. As in a magic performance, all of his devices were designed to lurk unseen, waiting to deliver an encapsulated moment of effect for a targeted audience in the space of the house: horses, servants, visitors, those caught by fire or those being burgled. And also like magic, the moment of effect was accentuated (the lighted taper, the alarm that will not go off until a special button is pressed), it depended on surprise (the rotating plaque, the changing alarm setting), it disguised the role of technology (the entry gate sensor system) and it often involved a kind of performer-spectator relationship between someone in control or 'in-the-know' and someone haplessly affected (master/servant; occupant/visitor; master/horse; household/burglar). These early time-programmed devices, embedded in the fabric of the house and characterised by the creation and sending of messages, represent a kind of prehistory of information technology and the smart home.

4. THE CHALLENGE OF THE SMART HOUSE FORESHADOWED

We will now try to sketch what might be learned from The Priory. The first point is that it took someone extraordinary, a supreme technological ironist, to conceive of interactive technologies for the house in the middle of the nineteenth century. These were artifacts that - unlike the life-saving nineteenth century advances in sanitation and food preparation (e.g., Lerly, 1999) - were intended to make more modest interventions in ongoing social connections in and around the home. The origins of these domestic innovations in techno-magical thinking are an indication of the novelty of bringing the tools of the industrial revolution into the social space of the home. This in turn foreshadows the ongoing challenge of building the smart home.

But there are three more specific ways in which The Priory foreshadowed today's effort to understand and create the smart house. Firstly, Robert-Houdin's artifacts focused not so much on saving labour, but on social connectivity: the relationships between post-collector and occupants, between visitors and occupants, between master and servants, between humans and horses (!), and between occupants and possible intruders. (See Randall, 2003 and Taylor et al 2007 for the modern focus on social connectivity.)

Secondly, the skill of the magical inventor requires a difficult kind of double-think: to create a novel device and then present it in such a way that its deployment is concealed. This concealment depends not just on covering up, but on leading spectators to construct an interpretation of the situation in which the deployment is not suspected or readily imagined. Such technological invisibility has parallels with a modern challenge of designing the smart home as understood in terms of mundane technology: to understand how the successful computer application becomes invisible in the everyday (e.g., Tolmie et al, 2003). Successful magical inventors learned how to bury their technologies in the mundane aspects of performance. Behind the seemingly irrelevant elements of a trick lies its secret. This is one reason for the magicians' second rule of *not repeating a trick before the same audience* - because the necessity to repeat irrelevant details will expose them as otherwise. However the concealment of technologies achieved by magicians is brittle, and depends on the peculiar contingencies of a performance. Technology is concealed in a fabricated version of the mundane, and is not entwined in an ongoing everyday life. And likewise in The Priory, the gadgets and devices probably existed in special circumstances maintained by their author. This is possibly why most of Robert-Houdin's domestic inventions did not outlive him; although some might be said to have re-emerged latterly.

Thirdly and finally, the gadgets of The Priory attempted to be useful in novel ways, but they moved beyond the purely functional. They were intended to deliver an effect at a key moment, and depended on the ongoing attention of a somewhat impressed audience. It was never intended that they sink into the ignominy of the mundane and taken for granted. In this way, Robert-Houdin's devices were similar to recent attempts to combine utility with artistry, as in the domestic designs of Bill Gaver (2000, 2006).

Through his inventions and writings on the theory of magic, it is clear that Robert-Houdin was a master of technological irony and the ambiguity of performance. In the most quoted passage from

his landmark work, *The Secrets of Magic and Conjuring*, he wrote: 'The magician is not a juggler. He is an actor playing the part of a magician.' Borrowing from this, we might say that technologies of the smart home should be actors too, playing the part of the purely functional.

5. CONCLUSION

It is now a truism that the smart home over the past thirty years has not been as successful as its proponents predicted. This is often discussed in terms of the social and cultural orderings of normal domestic routines and their separation from technology's inherent leaning toward utility. Within this discussion, the importance, but difficulty, of designing for the mundane in domestic life is often emphasized (e.g., Tolmie et al, 2003).

With The Priory as our model, we might interpret the impasse faced by the smart home as the problematic mix of magic and the mundane. That is, the clash between a transformative aspiration and the deep inertia of the domestic. On the other hand, we might also see that magic and the mundane share something in common. This is sensed first through the idea of 'invisibility'. The ethnographer's interest in the mundane goes hand in hand with the idea that certain aspects of social life are 'deleted out' and become invisible in some accounts. The work of servants, the plight of the poor, and administrative effort, are all examples of things that might become routinely invisible. Bowker & Star (1996) have noted the link between this kind of invisibility and magic: 'the missing work that makes things look magical'. And magic technologies, of course, also make things invisible. They are designed to create the effect that something happened by magic, and to conceal the mundane ordinariness of the explanation. It is above all the shame of this mundane ordinariness that chiefly motivates the magicians' first rule: *never disclose the secret*.

For the magician, then, magic and the mundane co-exist; though the latter is kept tucked away out of sight. And surely this must also be true for the designer of interactive technologies, in the home or elsewhere. In the conception of any new technology is an agenda of magic, of making possible what is currently impossible. And in magic visions like Weiser's (1991) the messiness of the everyday is similarly tucked away (Bell & Dourish, 2007). But to succeed, that same technology must come to be accepted in the ordinary and taken for granted. So magic, for its realization, depends on joining the mundane. And from time to time, the mundane needs a little magic.

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