

# CURIOUS THINGS FOR CURIOUS PEOPLE

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*“All work and no play makes Jack a dull boy.”*  
*- popular saying*

A quiet revolution has been spreading throughout Europe and the world, as digital technology escapes the workplace and infiltrates our everyday lives.

In this post-dot.com era, it is easy to dismiss the importance of this revolution. Computers are yesterday's news: the cutting edge has moved on to bio- and nanotechnology. This is ironic, for it is now, when digital technologies are becoming mundane commodities, that their cultural effects are becoming truly manifest. Many of us are increasingly uneasy about these effects. Like all the things we make, technological artefacts reflect our values, aspirations, fears and desires. By the activities they support, they emphasise some pursuits as being worthwhile. By those they neglect, they implicitly judge others to be worthless or undesirable. There is nothing inherently wrong with this. But as technologies move into our everyday lives, it seems that they are increasingly offering a skewed reflection of who we are and who we might be.

One distortion of current technologies is to make it seem that all of life is work. The stove that guides us through gourmet recipes, the electronic photo albums that prompt us to contact our loved ones regularly, the TV that allows us to save and replay programmes, all join a conspiracy of productivity. But we do not just engage with the world in the form of problems to be solved and tasks to be pursued. We are also playful creatures – *Homo Ludens*, to use Huizinga's (1950) term. From this perspective, we are characterised not just by our thinking or achievements, but also by our *ludic* engagement with the world: our curiosity, our love of diversion, our explorations, inventions and wonder. Play is not just mindless entertainment, but an essential way of engaging with and learning about our world and ourselves. Underestimating its importance is a key factor in the pervasive distortions technology makes to our culture.

A related distortion is that technologies tend to be designed for an undifferentiated mass of 'normal' people. The result is a set of bland devices that appeal equally to everybody, and deeply to nobody. The technology industry plays it safe. By supporting traits and activities that are close to the social norm, their products discourage us from exploring those that are more marginal, dissuading us from recognising the value in, for instance, spiritual reflection or solitary contemplation.

Yet another distortion comes from technologies' tendency to insist on telling us what to do and who to be. Through the functionality they offer, their aesthetics, and the ways they are marketed, technologies convey a narrative of use that entangles our imagination and self-image. This is dangerous even when technology supports the values we want, because the values have been *commodified*: repackaged for consumption so that we buy not only a product, but the product's story as well (see e.g. Debord, 1983/1967). This can alienate us from truly exploring and expressing our own values in original and individual ways.

If technologies are designed to tell us what to do, we lose the ability to find our own activities. If they are designed for the many, we must assimilate our personal values into the generic values of the majority. If they are designed to ignore play, or to replace it with programmed entertainment, we start to see life in terms of defined and bounded chores. When all these things happen together, as they are now, we are in danger of becoming entrapped in a bland, safe and increasingly global story of what it means to be human, and what it means to have a good life.

But I have hopes for a different future, one in which digital devices help us to reflect, daydream and explore, systems are designed for our private idiosyncrasies as well as our public personas, and technologies don't always tell us what to do and who to be. In the next sections, I offer a catalogue of devices and systems that might inhabit such a future.

### Through The Looking Glass

*“At our house we open cans. We have to open many cans. And that is why we have a Zans.  
A Zans for cans is very good. Have you a Zans for cans? You should.”*  
- Dr. Seuss

Imagine waking up to the sound of birds singing a song of your choice. This experience could be yours if you used the Dawn Chorus (Figure 1a), a birdfeeder

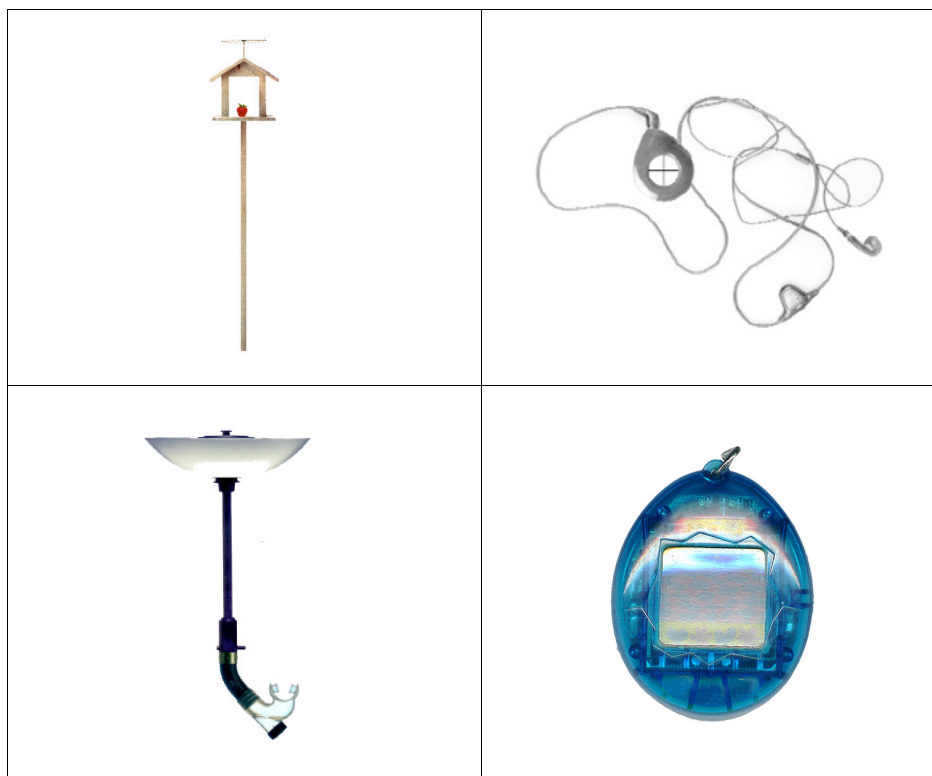


Figure 1 (clockwise from top left): a) The Dawn Chorus b) The (De)Tour Guide c) the Telegotchi, d) the Prayer Device

that would combine tweet-recognition, artificial intelligence, and operant conditioning to teach birds new songs. When birds landed on the feeder, they would be played a short sample of the desired song, and fed according to how well they imitated it. Over time, some birds would learn to sing the entire song. Moreover, if individual birds could be recognised, they could all be taught different parts of the same polyphonic composition.

On leaving home, you might explore the city using the (De)tour Guide (Figure 1b) a device that uses GPS and an electronic compass to determine its location and heading. Its audio instructions would allow you to be surprised by what you discover when turning the corner. Better still, you could programme it to get lost for a while. Simply indicate how much time you have to spend, and it will take you on a random tour of the city, or perhaps one taken by a local eccentric or random stranger. A waste of time? Perhaps not: the (De)tour Guide could help you get to know new cities, and even your own, more intimately than officially mandated guides allow.

While stopping for a coffee, you might play with your Telegotchi, a version of the popular children's toy with no buttons (Figure 1c). Starter sets might include physiological monitors such as GSR or heart-rate sensors to help you establish an initial rapport, but in the long run the goal would be to relay on psionic communication alone to keep the little virtual creature happy.

You might also decide to stop by a Prayer Device (Figure 1d) during your walk. Designed for the street like a new sort of telephone booth the device would send prayers, wishes or entreaties straight into the sky overhead in a tightly focused, high-powered transmission. You might believe your message would be heard by God, or by a passing UFO, or by nobody. In any case, it might be reassuring to know powerful technology was supporting you in your attempt to communicate beyond this world.

Designs such as these embody new, ludic activities we might pursue. They encourage exploration, wondering, and new forms of playful influence over our worlds and ourselves. They not only embody unconventional assumptions, but do so in a way that demands neither conviction nor rejection. They encourage an attitude of speculation, allowing us to explore our own values, even if these depart from perceived cultural norms.

These designs embody strong narratives of use, encouraging new forms of engagement or even rebellion against their implied values. Other designs remain more open, inviting people to invent their own narratives of use.

## **Power to the People**

*"Why a fountain in a covered space is conducive to daydreaming has yet to be explained."  
- Walter Benjamin*

The History Tablecloth (Figure 2) uses electroluminescent material printed onto a flexible substrate to create a very large, low-resolution display of lace-like elements. Objects on the table are tracked using weight sensors mounted under the table's legs. When items are left on the table for more than a few minutes, the cloth starts to glow beneath them, creating a halo that expands over a period of days. When items are removed, the glow fades quickly. That's all it does.

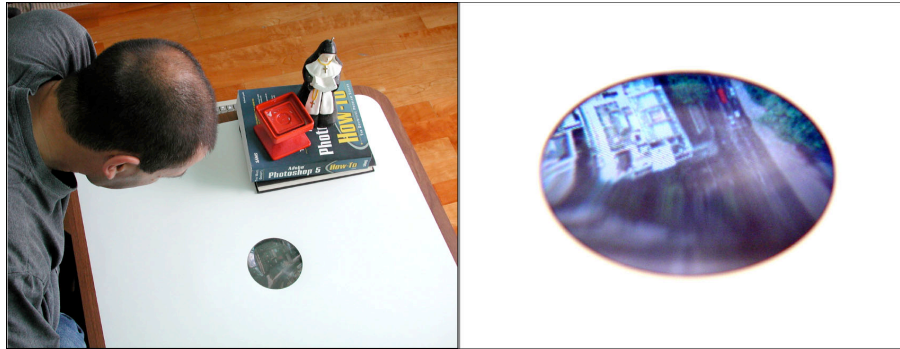


*Figure 2: The History Tablecloth highlights objects that have been left on it.*

The History Tablecloth makes visible a significant aspect of home life—the history and movement of objects on domestic surfaces, emphasized by ethnographers as an important resource for domestic coordination. Rather than bringing new content into the home, the History Tablecloth embodies a suggestion that domestic technologies may make powerful effects simply by pointing out the richness of existing phenomena.

By visualizing an important aspect of the home, the Tablecloth is designed to provoke people to think about how they use their homes. The system doesn't imply a value judgment about moving objects or leaving them still, however. People might be reminded to tidy up more often, but equally they might simply enjoy the patterns that emerge when things are left on the table over time. The Tablecloth doesn't dictate peoples' reactions or suggest what activities they might pursue. It isn't *for* anything, and that's the point. It simply creates a situation that is novel and potentially significant, and leaves people to find their own meaning within it.

What happens when people are given technologies that aren't 'for' anything? The Drift Table (Figure 3), for example, is a kind of 'digital hot air balloon' that allows users to drift over the British countryside from the comfort of their own sitting room. The weight of objects on the table controls the slow scroll of aerial photographs displayed on a central view-port. Adding weight causes the table to speed up and 'descend' towards the landscape below, while shifting weight controls the direction of the Table's virtual travel. A small screen on the side of the table shows the current location, and a built-in electronic compass ensures the images are aligned with the actual countryside. Containing almost a terabyte of high-resolution aerial photography of England and Wales, the Drift Table allows almost endless exploration of the countryside.



*Figure 3: The Drift Table is a kind of ‘digital hot air balloon’, showing slowly moving aerial photography controlled by the placement of weights on its surface.*

The Drift Table was carefully designed so that it wouldn’t privilege *any* particular task. Much like the History Tablecloth, it was designed to create a situation for people to explore—one with clear rules in terms of usability, but without clear purpose or motivation.

Designs that are not ‘for’ anything are not really complete until people use them and find their own meanings for them. We gave the Drift Table to several households so they could live with it for a month or so. Their experiences reflected the diverse possibilities afforded by its design. One household, for instance, habitually took the Drift Table on ‘journeys’—travelling to Bournemouth to investigate high real-estate prices, for example, or hovering over a tea-shop in a childhood village while engaging in nostalgic chat with friends. These people spent an extraordinary amount of time and effort pursuing these journeys, and told us that the Drift Table replaced a significant proportion of television watching for them. For them, the Drift Table became a resource for exploration, curiosity, and playful interaction.

Another family, in contrast, tended to use the Drift Table to show neighbours and friends their local neighbourhood, and otherwise let it drift at random. Sometimes they would set the Table moving at night, and arise in the morning curious to see where it had ended up. This household didn’t use the Drift Table in a focused way, but still engaged with it over time. For them, the meaning of the Drift Table was as a kind of ambient window onto the world, one that they didn’t need to actively control, but could engage with in a looser and more unfocused way.

The ability to wander among multiple possibilities afforded by the Drift Table epitomises ludic activity. Play is not just a matter of games or entertainment, but rather one of a fluid engagement with myriad opportunities and interpretations. In providing a rich situation without a strong narrative of use, the Drift Table – and other designs like it – start to point to ways that technology might support people in finding their own, individual, undirected engagements with the world.

Can designs that aren’t for anything work at a larger scale? Can they provide a significant alternative to the encroaching future of a seamless, ubiquitous digital overlay on everyday life? In my final example, I sketch a system that usurps emerging technologies for ludic ends.

## **The Superstitious Home**

*“It’s time to express your desire for a new pursuit”  
- horoscope*

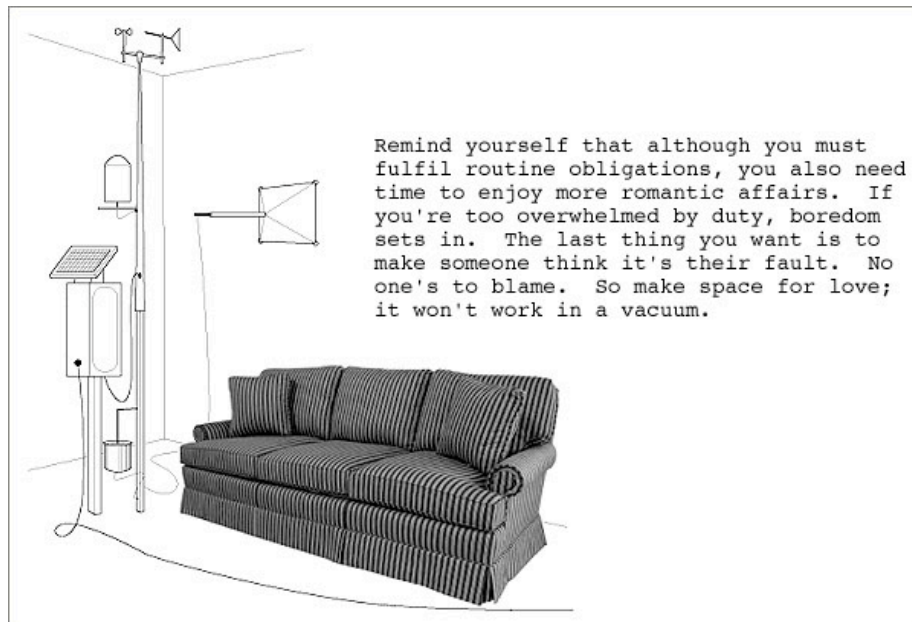
Imagine living in a home with tens or hundreds of sensors watching you. They might follow your movements and activities, record what you say, track the foods you buy and consume, and even give you helpful cooking tips. Your toilet might provide feedback about your health, and your bed might track your sleep habits. And of course this information might be sent to family members, to carers, or even to retailers and insurance companies.

Many people might find this prospect disturbing, but many of these technologies are already on the market, and all are being developed. There is growing consensus that the home of the future will be *smart*, sensing our activities and working quietly behind the scenes to provide us with a happy and efficient life.

But what if we don’t want to be monitored? What if we are uncomfortable about a system – any system – knowing everything we do at home?

The Home Health Horoscope (Figure 5) provides an alternative to the “smart” home. In some ways, the concept is much the same: a large number of sensors monitor the home, and the data they provide is used to infer peoples’ activities. But instead of using this information for automation, communication or control, the system would use it to generate a daily horoscope for the home. This might be printed to read over one’s morning coffee. Instead of reflecting the planet’s alignment, however, the Home Health Horoscope would reflect the configuration of sensor readings, and attempt to comment meaningfully on the home’s emotional and even spiritual well-being.

The Home Health Horoscope is not just a frivolous parody of the smart



*Figure 5 The Home Health Horoscope would use ‘shy sensing’ to make guesses about the home’s emotional and spiritual well-being.*

home: it embodies several hypotheses about how people might live with technology.

First, the system lends itself to interpretative appropriation by its use of horoscopes. Horoscopes are a culturally familiar medium for diagnosing current well-being and for making prescriptions for the future. One of their appeals is that they are usefully ambiguous. At a local level, their language is abstract enough that people can project their own circumstances upon them. Yet horoscopes seem to make strong, verifiable statements, and this exaggeration of certainty can encourage people to question the system's veracity. We might deny *believing* in horoscopes, but many of us enjoy reading them anyway. We take an attitude of bemused speculation, trying on the horoscope's prognostications like a new shirt. This process of entertaining a belief can itself be pleasurable. Moreover, it can encourage us to consider issues and possibilities we might otherwise overlook.

Because the Home Health Horoscope would initiate a process of interpretation to be completed by the user, it would not have to be correct to be interesting. This allows the use of '*shy sensors*' to monitor meaningful indicators of the home's well-being without invading people's privacy. Rather than using video-tracking to follow people, for instance, sensors might monitor the condensation on a window, or the weight of the coffeemaker, or the pattern of open doors in the home. Measuring indirect indicators of the home activities in this way helps to reduce intrusions on privacy. Sensors can be physically designed so they simply cannot pick up intrusive information. The system might suggest interpretations, but it would always be clear that people are responsible for drawing their own conclusions.

The Home Health Horoscope might be aimed overtly at diagnosing well-being, but it would also provide a resource for addressing many of the problems addressed by traditional smart home technologies. Reading that "others see you as suspiciously secretive or aloof" could remind you to contact friends and family members. "Instinctively, you know you have to make certain changes in your personal or domestic affairs" might lead you to try out a new recipe. "Independence, yours and someone else's" could prompt you to visit an aged relative. The Home Health Horoscope might present itself as dealing with emotional issues, but these arise in practical contexts. By raising these issues, the system might prompt people to act upon them, setting the scene in which people can decide their own responses.

The Home Health Horoscope has been designed for domestic use, but the principles behind it extend beyond the home. The combination of shy sensing, evocative but ambiguous outputs, and room for personal interpretation characterise most of the proposals I've described here: they characterise an approach to technologies, and our relationship with them, that might be applied in many arenas.

### **Conclusion: Everyday Play**

Illuminating tablecloths, intelligent bird feeders and horoscopes for the home — can these really comprise a vision of our technological future? Taken in and of themselves, the answer is probably 'no'. But the designs I've described here are not meant to be a comprehensive or even literal account of the technology that might inhabit our future lives. Rather they manifest an alternative approach to designing technology, one that stresses its humanistic possibilities and cultural ramifications. This approach can lead to the sorts of speculative designs I describe here. But more traditional systems for work, home, and communication might also benefit from the lessons these designs embody.

First, we need to embrace the fact that life is not just work. People do not engage with the world only in the form of problems to be solved and tasks to

perform. Second, we need to stop designing for an undifferentiated mass of ‘normal’ people. We tend to cling to the notion in our research and our designs, and mass marketing encourages this to appeal to large populations. But we need to resist these homogenising forces, embracing and encouraging individuality and choice through the technologies we produce. Most of all, we need to stop designing technology that tells us what to do and who to be. Assumptions that technology should be useful and usable—that it should be clear what you are meant to do with a system, and how to do it—need to be radically rethought.

The designs described here present an alternative to the demanding, generic, and pedantic technologies that seem to be infiltrating our everyday lives. They share the trait of being suggestive of new perspectives and activities, while remaining open to interpretation by users. Perhaps the most important tactic for achieving this is the creation and maintenance of *interpretative ambiguity*. Ambiguity, used judiciously, is a key to producing systems that can be intimate without being invasive. If systems do not pretend to embody unequivocal knowledge, then their uncertainty may moderate threats to privacy. If they offer strange new narratives, then their evident oddity may allow us to entertain new perspectives without identifying with them. If they stand outside recognisable genres, so that it is unclear what they are for, we can decide for ourselves rather than waiting for them to tell us what to do. In general, if technologies stop trying to be so *smart*, they might allow us to be more *curious*, supporting us in playing with our own idiosyncratic perceptions, ideas and meanings. After all, it is this spirit of questioning, of wondering and of wandering, that is crucial to nurture for our culture now and in the future.

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### **References**

Debord, G. (1983/1967). *The society of the spectacle*. Detroit: Black and Red.

Huizinga, J. (1950). *Homo Ludens: A study of the play-element in culture*. Boston: Beacon.