

I.

BEYOND RADICAL DESIGN?

As Fredric Jameson famously remarked, it is now easier for us to imagine the end of the world than an alternative to capitalism. Yet alternatives are exactly what we need. We need to dream new dreams for the twenty-first century as those of the twentieth century rapidly fade. But what role can design play?

When people think of design, most believe it is about problem solving. Even the more expressive forms of design are about solving aesthetic problems. Faced with huge challenges such as overpopulation, water shortages, and climate change, designers feel an overpowering urge to work together to fix them, as though they can be broken down, quantified, and solved. Design's inherent optimism leaves no alternative but it is becoming clear that many of the challenges we face today are unfixable and that the only way to overcome them is by changing our values, beliefs, attitudes, and behavior. Although essential most of the time, design's inbuilt optimism can greatly complicate things, first, as a form of denial that the problems we face are more serious than they appear, and second, by channeling energy and resources into fiddling with the world out there rather than the ideas and attitudes inside our heads that shape the world out there.

Rather than giving up altogether, though, there are other possibilities for design: one is to use design as a means of speculating how things could be—speculative design. This form of design thrives on imagination and aims to open up new perspectives on what are sometimes called *wicked problems*, to create spaces for discussion and debate about alternative ways of being, and to inspire and encourage people's imaginations to flow freely. Design speculations can act as a catalyst for collectively redefining our relationship to reality.

Dreams are powerful. They are repositories of our desire. They animate the entertainment industry and drive consumption. They can blind people to reality and provide cover for political horror. But they can also inspire us to imagine that things could be radically different than they are today, and then believe we can progress toward that imaginary world.¹

It is hard to say what today's dreams are; it seems they have been downgraded to hopes—hope that we will not allow ourselves to become extinct, hope that we can feed the starving, hope that there will be room for us all on this tiny planet. There are no more visions. We don't know how to fix the planet and ensure our survival. We are just hopeful.

PROBABLE/PLAUSIBLE/POSSIBLE/PREFERABLE

Being involved with science and technology and working with many technology companies, we regularly encounter thinking about futures, especially about "The Future." Usually it is concerned with predicting or forecasting the future, sometimes it is about new trends and identifying weak signals that can be extrapolated into the near future, but it is always about trying to pin the future down. This is something we are absolutely not interested in; when it comes to technology, future predictions have been proven wrong again and again. In our view, it is a pointless activity. What we are interested in, though, is the idea of possible futures and using them as tools to better understand the present and to discuss the kind of future people want, and,

of course, ones people do not want. They usually take the form of scenarios, often starting with a what-if question, and are intended to open up spaces of debate and discussion; therefore, they are by necessity provocative, intentionally simplified, and fictional. Their fictional nature requires viewers to suspend their disbelief and allow their imaginations to wander, to momentarily forget how things are now, and wonder about how things could be. We rarely develop scenarios that suggest how things *should* be because it becomes too didactic and even moralistic. For us futures are not a destination or something to be strived for but a medium to aid imaginative thought—to speculate with. Not just about the future but about today as well, and this is where they become critique, especially when they highlight limitations that can be removed and loosen, even just a bit, reality's grip on our imagination.

As all design to some extent is future oriented, we are very interested in positioning design speculation in relation to futurology, speculative culture including literature and cinema, fine art, and radical social science concerned with changing reality rather than simply describing it or maintaining it.² This space lies somewhere between reality and the impossible and to operate in it effectively, as a designer, requires new design roles, contexts, and methods. It relates to ideas about progress—change for the better but, of course, *better* means different things to different people.

To find inspiration for speculating through design we need to look beyond design to the methodological playgrounds of cinema, literature, science, ethics, politics, and art; to explore, hybridize, borrow, and embrace the many tools available for crafting not only things but also ideas—fictional worlds, cautionary tales, what-if scenarios, thought experiments, counterfactuals, *reductio ad absurdum* experiments, prefigurative futures, and so on.

In 2009, the futurologist Stuart Candy visited the Design Interactions program at the Royal College of Art and used a fascinating diagram in his presentation to illustrate different kinds of potential futures.³ It consisted of a number of cones fanning out from the present into the future. Each cone represented different levels of likelihood. We were very taken by this imperfect but helpful diagram and adapted it for our own purposes.

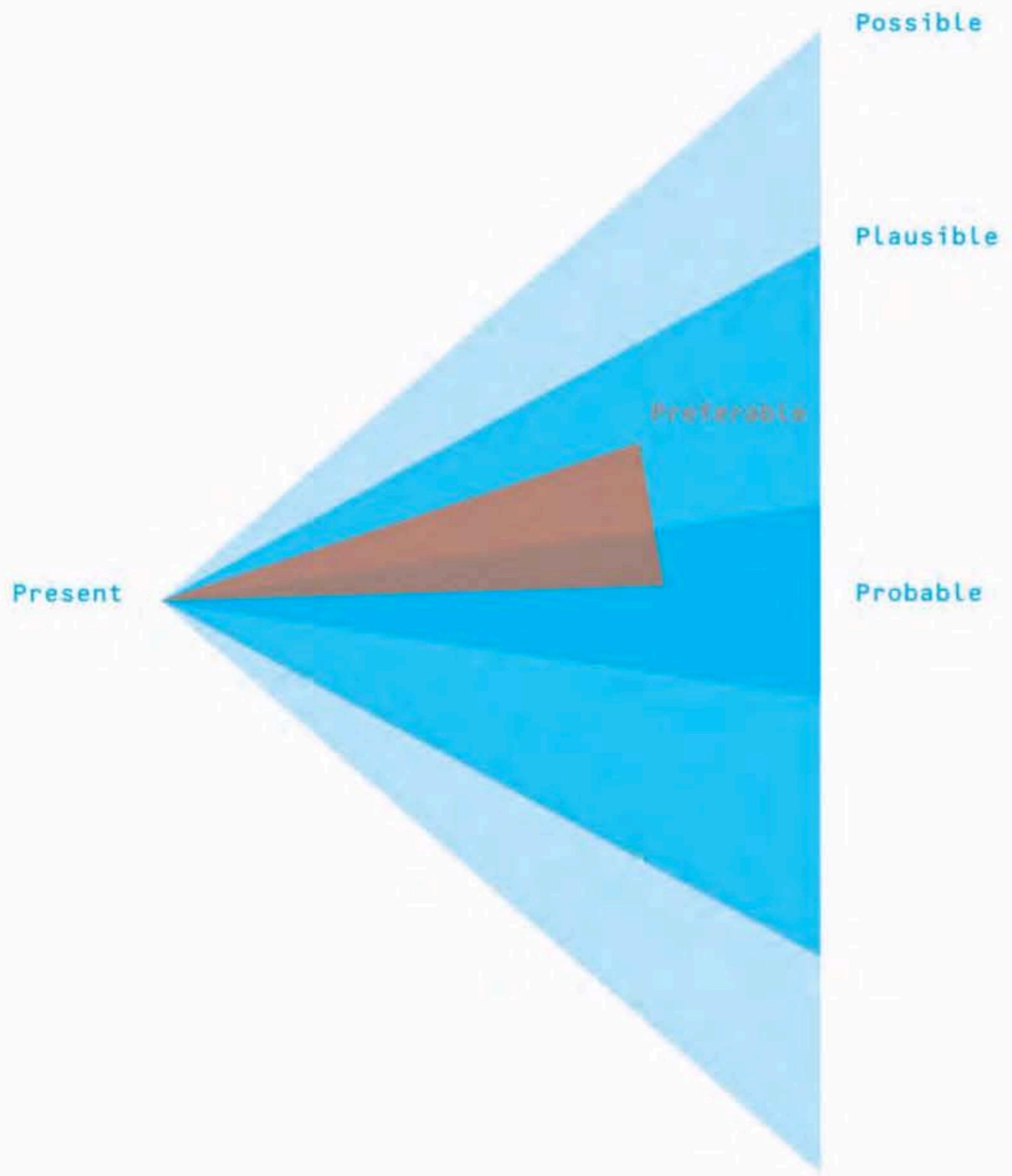
The first cone was the probable. This is where most designers operate. It describes what is likely to happen unless there is some extreme upheaval such as a financial crash, eco disaster, or war. Most design methods, processes, tools, acknowledged good practice, and even design education are oriented toward this space. How designs are evaluated is also closely linked to a thorough understanding of probable futures, although it is rarely expressed in those terms.

The next cone describes plausible futures. This is the space of scenario planning and foresight, the space of what could happen. In the 1970s companies such as Royal Dutch Shell developed techniques for modeling alternative near-future global situations to ensure that they would survive through a number of large-scale, global, economic, or political shifts. The space of plausible futures is not about prediction but exploring alternative economic and political futures to ensure an organization will be prepared for and thrive in a number of different futures.

The next cone is the possible. The skill here is making links between today's world and the suggested one. Michio Kaku's book *Physics of the Impossible*⁴ sets out three classes of impossibility, and even in the third, the most extreme—things that are not possible according to our current understanding of science—there are only two, perpetual motion and precognition, which, based on our current understanding of science, are impossible. All other changes—political, social, economic, and cultural—are not impossible but it can be difficult to imagine how we would get from here to there. In the scenarios we develop we believe, first, they should be scientifically possible, and second, there should be a path from where we are today to where we are in the scenario. A believable series of events that led to the new situation is necessary, even if entirely fictional. This allows viewers to relate the scenario to their own world and to use it as an aid for critical reflection. This is the space of speculative culture—writing, cinema, science fiction, social fiction, and so on. Although speculative, experts are often consulted when building these scenarios, as David Kirby points out in a fascinating chapter about distinctions between what he calls speculative scenarios and fantastic science in his book *Lab Coats in Hollywood*; the role of the expert is often, not to prevent the impossible but to make it acceptable.⁵

Beyond this lies the zone of fantasy, an area we have little interest in. Fantasy exists in its own world, with very few if any links to the world we live in. It is of course valuable, especially as a form of entertainment, but for us, it is too removed from how the world is. This is the space of fairy tales, goblins, superheroes, and space opera.

A final cone intersects the probable and plausible. This is the cone of preferable futures. Of course the idea of preferable is not so straightforward; what does *preferable* mean, for whom, and who decides? Currently, it is determined by government and industry, and although we play a role as consumers and voters, it is a limited one. In *Imaginary Futures*, Richard Barbrook explores futures as tools designed for organizing and



PPPP. Illustration by Dunne & Raby.

justifying the present in the interests of a powerful minority.⁶ But, assuming it is possible to create more socially constructive imaginary futures, could design help people participate more actively as citizen-consumers? And if so, how?

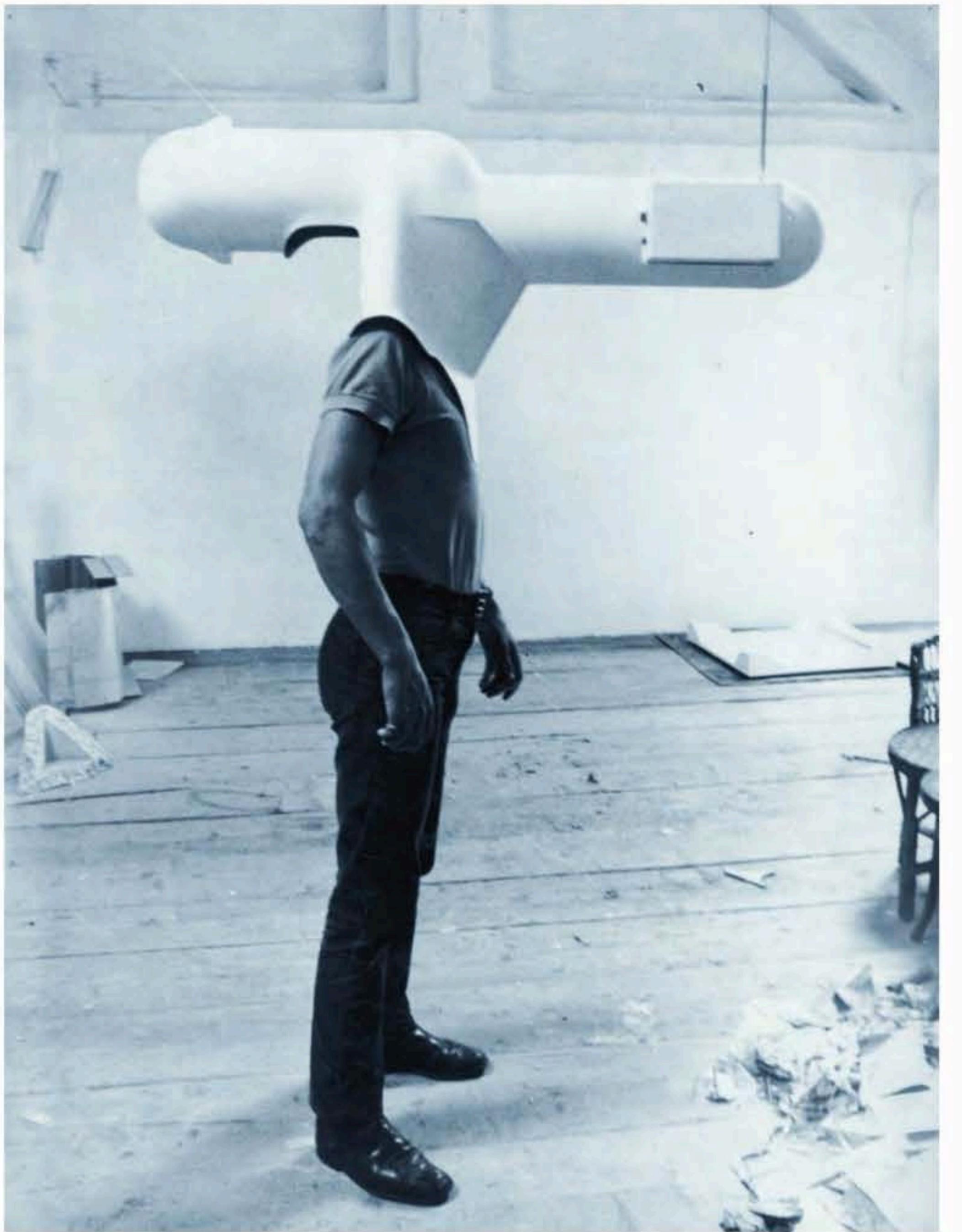
This is the bit we are interested in. Not in trying to predict the future but in using design to open up all sorts of possibilities that can be discussed, debated, and used to collectively define a preferable future for a given group of people: from companies, to cities, to societies. Designers should not define futures for everyone else but working with experts, including ethicists, political scientists, economists, and so on, generate futures that act as catalysts for public debate and discussion about the kinds of futures people really want. Design can give experts permission to let their imaginations flow freely, give material expression to the insights generated, ground these imaginings in everyday situations, and provide platforms for further collaborative speculation.

We believe that by speculating more, at all levels of society, and exploring alternative scenarios, reality will become more malleable and, although the future cannot be predicted, we can help set in place today factors that will increase the probability of more desirable futures happening. And equally, factors that may lead to undesirable futures can be spotted early on and addressed or at least limited.

BEYOND RADICAL DESIGN?

We have long been inspired by radical architecture and fine art that use speculation for critical and provocative purposes, particularly projects from the 1960s and 1970s by studios such as Archigram, Archizoom, Superstudio, Ant Farm, Haus-Rucker-Co, and Walter Pichler.⁷ But why is this so rare in design? During the Cold War Modern exhibition at the Victoria and Albert Museum in 2008 we were delighted to finally see so many projects from this period for real. The exuberant energy and visionary imagination of the projects in the final room of the exhibition were incredibly inspiring for us. We were left wondering how this spirit could be reintroduced to contemporary design and how design's boundaries could be extended beyond the strictly commercial to embrace the extreme, the imaginative, and the inspiring.

We believe several key changes have happened since the high point of radical design in the 1970s that make imaginative, social, and political speculation today more difficult and less likely. First, during the 1980s design became hyper-commercialized to such an extent that alternative roles for



Walter Pichler, *TV Helmet (Portable Living Room)*, 1967. Photograph by Georg Mladek. Photograph courtesy of Galerie Elisabeth and Klaus Thoman/Walter Pichler.

design were lost. Socially oriented designers such as Victor Papanek who were celebrated in the 1970s were no longer regarded as interesting; they were seen as out of sync with design's potential to generate wealth and to provide a layer of designer gloss to every aspect of our daily lives. There was some good in this—design was embraced by big business and entered the mainstream but usually only in the most superficial way. Design became fully integrated into the neoliberal model of capitalism that emerged during the 1980s, and all other possibilities for design were soon viewed as economically unviable and therefore irrelevant.

Second, with the fall of the Berlin Wall in 1989 and the end of the Cold War the possibility of other ways of being and alternative models for society collapsed as well. Market-led capitalism had won and reality instantly shrank, becoming one dimensional. There were no longer other social or political possibilities beyond capitalism for design to align itself with. Anything that did not fit was dismissed as fantasy, as unreal. At that moment, the “real” expanded and swallowed up whole continents of social imagination marginalizing as fantasy whatever was left. As Margaret Thatcher famously said, “There is no alternative.”

Third, society has become more atomized. As Zygmunt Bauman writes in *Liquid Modernity*,⁸ we have become a society of individuals. People work where work is available, travel to study, move about more, and live away from their families. There has been a gradual shift in the United Kingdom from government that looks after the most vulnerable in society to a small government that places more responsibility on individuals to manage their own lives. On the one hand this undoubtedly creates freedom and liberation for those who wish to create new enterprises and projects but it also minimizes the safety net and encourages everyone to look out for him- or herself. At the same time, the advent of the Internet has allowed people to connect with similar-minded people all over the world. As we channel energy into making new friends around the world we no longer need to care about our immediate neighbors. On a more positive note, with this reduction in top-down governing, there has been a corresponding shift away from the top-down mega-utopias dreamt up by an elite; today, we can strive for one million tiny utopias each dreamt up by a single person.

Fourth, the downgrading of dreams to hopes once it became clear that the dreams of the twentieth century were unsustainable, as the world's population has more than doubled in the last forty-five years to seven billion. The great modernist social dreams of the post-war era probably reached a peak in the 1970s when it started to become clear that the planet had limited

resources and we were using them up fast. As populations continued to grow at an exponential rate we would have to reconsider the consumer world set in motion during the 1950s. This feeling has become even more acute with the financial crash and the emergence since the new millennium of scientific data suggesting that the climate is warming up due to human activity. Now, a younger generation doesn't dream, it hopes; it hopes that we will survive, that there will be water for all, that we will be able to feed everyone, that we will not destroy ourselves.

But we are optimistic. Triggered by the financial crash of 2008, there has been a new wave of interest in thinking about alternatives to the current system. And although no new forms of capitalism have emerged yet, there is a growing desire for other ways of managing our economic lives and the relationship among state, market, citizen, and consumer. This dissatisfaction with existing models coupled with new forms of bottom-up democracy enhanced by social media make this a perfect time to revisit our social dreams and ideals and design's role in facilitating alternative visions rather than defining them. Of being a catalyst rather than a source of visions. It is impossible to continue with the methodology employed by the visionary designers of the 1960s and 1970s. We live in a very different world now but we can reconnect with that spirit and develop new methods appropriate for today's world and once again begin to dream.

But to do this, we need more pluralism in design, not of style but of ideology and values.

2.

A MAP OF UNREALITY

Once designers step away from industrial production and the marketplace we enter the realm of the unreal, the fictional, or what we prefer to think of as conceptual design—design about ideas. It has a short but rich history and it is a place where many interconnected and not very well understood forms of design happen—speculative design,¹ critical design,² design fiction,³ design futures,⁴ antidesign, radical design, interrogative design,⁵ design for debate, adversarial design,⁶ discursive design,⁷ futurescaping,⁸ and some design art.

For us, this separation from the marketplace creates a parallel design channel free from market pressures and available to explore ideas and issues. These could be new possibilities for design itself; new aesthetic possibilities for technology; social, cultural, and ethical implications for science and technology research; or large-scale social and political issues such as democracy, sustainability, and alternatives to our current model of capitalism. This potential to use the language of design to pose questions, provoke, and inspire is conceptual design's defining feature.

It is different from social and humanitarian design, and design thinking too, which, although also often rejecting market-driven design, still operate within the limits of reality as it is. This is very important for us. We are not talking about a space for experimenting with how things are now, making them better or different, but about other possibilities altogether.

We are more interested in designing for how things could be. Conceptual design provides a space for doing this. It deals, by definition, with unreality. Conceptual designs are not conceptual because they haven't yet been realized or are waiting to be realized but out of choice. They celebrate their unreality and take full advantage of being made from ideas. Patrick Stevenson Keating's *The Quantum Parallelograph* (2011) is a public engagement prop exploring ideas about quantum physics and multiverses by finding and printing out online information from a user's "parallel life." It uses abstraction along with generic technical references to suggest a strange technological device. It is clearly a prop but it sets to work on the imagination very quickly. The aesthetics are fresh, striking, and immediately signal that the object is conceptual without diminishing it in anyway. A more concrete example is *MTKS-3/The Meta-territorial Kitchen System-3* (2003) by Martí Guixé. It consists of models of components for an open source kitchen, the final objects are abstract, simplified geometric forms that celebrate their propness and make no effort at realism; they are what they are: ideas.

It is often said that if something is conceptual, it is only an idea, but that is missing the point. It is because it is an idea that it is important. New ideas are exactly what we need today. Conceptual designs are not only ideas but also ideals, and as the moral philosopher Susan Neiman has pointed out, we should measure reality against ideals, not the other way around: "Ideals are not measured by whether they conform to reality; reality is judged by whether it lives up to ideals. Reason's task is to deny that the claims of experience are final—and to push us to widen the horizon of our experience by providing ideas that experience ought to obey."⁹



Patrick Stevenson-Keating, *The Quantum Parallelograph*, 2011.



Martí Guixé, MTKS-3:
The Meta-territorial Kitchen
System-3, 2003. Photograph by
Imagekontainer/Inga Knölke.

One of the main purposes of conceptual design, therefore, as we see it, is to provide an alternative context to design that is driven entirely by market forces. It is a space for thinking, for trying out ideas, and ideals. As Hans Vaihinger writes in *The Philosophy of As If*, “The ideal is an ideational construct contradictory in itself and in contradiction with reality, but it has an irresistible power. The ideal is a practical fiction.”¹⁰

A MAP OF UNREALITY

The spectrum of conceptual design is broad. Each area of design has its own form and is used in different ways. At one end it is very close to conceptual art and is about pure ideas, often to do with the medium itself. Much applied art, ceramics, furniture, and device art, for example, sit here. At the other end of the spectrum conceptual design means a parallel space of speculation that uses hypothetical or, more accurately, fictional products to explore possible technological futures.¹¹ Industrial and product design usually operate at this end. This is the end we are interested in.

Even though Marcel Duchamp is acknowledged as the first true conceptual artist, it was not until the 1960s that artists such as Sol LeWitt and Adrian Piper clearly articulated what it meant to make art out of ideas. In his “Sentences on Conceptual Art”¹² (1969) LeWitt lists what have become for many the core features of a conceptual artwork, for example:

10. Ideas can be works of art; they are in a chain of development that may eventually find some form. All ideas need not be made physical.
13. A work of art may be understood as a conductor from the artist's mind to the viewer's. But it may never reach the viewer, or it may never leave the artist's mind.
17. All ideas are art if they are concerned with art and fall within the conventions of art.
28. Once the idea of the piece is established in the artist's mind and the final form is decided, the process is carried out blindly. There are many side effects that the artist cannot imagine. These may be used as ideas for new works.
31. If an artist uses the same form in a group of works, and changes the material, one would assume the artist's concept involved the material.

One of the most interesting for us is point 9:

The concept and idea are different. The former implies a general direction while the latter is the component. Ideas implement the concept.¹³

In design, people often struggle to get beyond the concept to appreciate and engage with the ideas. It is at the level of ideas that the craft of conceptual design happens. Ideas are constructed or found, evaluated, combined, edited, tweaked, and embedded.

Conceptual approaches exist in most areas of design, either in a pure state, usually for exhibitions, or fused with more commercial goals and available to buy. Graphic design has a long tradition of experimenting with ideas and an established critical context for discussing and debating them. The work of highly conceptual studios such as Åbäke, Metahaven, and Daniel Eatoek is regularly discussed, exhibited, and debated in the design press. In *Facestate* (2011) Metahaven use the kind of strategic thinking usually applied to commercial corporate identity projects to critique the political implications of blurring boundaries between consumerism and citizenship, especially when social software is embraced by governments in the name of improved transparency and interaction.



Metahaven, *Facestate*, 2011. Photograph by Gene Pittman. Photograph courtesy of Walker Art Center.

In fashion it ranges from one-off haute couture pieces for the catwalk to mass-produced diffusion lines for sale in high street shops. In the 1960s, inspired by the space age, designers such as André Courrèges, Pierre Cardin, and Paco Rabanne disregarded practicalities to explore ideas about the future using new forms, production processes, and materials. In the 1980s, Katherine Hamnett made protest t-shirts fashionable with her infamous slogan t-shirts such as "NUCLEAR BAN NOW," "PRESERVE THE RAINFORESTS," "SAVE THE WORLD," and "EDUCATION NOT MISSILES." Today, leading designers use the catwalk to present experimental clothes that more often communicate brand values and the designer's identity than challenge social norms. Hussein Chalayan is an exception. His shows are beautifully crafted vignettes that make use of ingenious objects and novel technologies; his "airplane dress" is one of our favorites. Companies such as Comme des Garçon, A-POC, and Martin Margiella make highly conceptual but wearable clothes that play with ideas of materiality and tailoring, social conventions and expectations, and aesthetics.



Pierre Cardin, *Space Age Collection*, 1966. Photograph courtesy of Archive Pierre Cardin.



Hussein Chalayan, *Before Minus Now*, 2000. Photograph by Chris Moore/Catwalking.



Droog by Peter van der Jagt, *Bottoms Up Doorbell*, 1994.

Photograph by Gerard Van Hees.

Furniture design has a history of using chairs as vehicles for exploring new design philosophies and visions for everyday life, whether aesthetic, social, or political. The 1990s saw a renewed interest in conceptualism driven primarily by the Dutch design group Droog. It is hard to say when conceptualism first appeared in furniture design—definitely the Bauhaus's early bent steel tube chairs and in work by postwar Italian designers such as Bruno Munari, Ettore Sottsass, Studio De Pas D'Urbino, Lomazzi, Archizoom, Alessandro Mendini, and Memphis before design dissolved into a miasma of extreme commercialism in the 1980s. But, possibly, it was the designer William Morris who was the first to create critical design objects in the way we understand them today, that is, embodying ideals and values intentionally at odds with those of his own time.¹⁴ As Will Bradley and Charles Esche point out in their introduction to *Art and Social Change*, William Morris's thinking is still relevant today through his opposition of utopian ideals of artistic production with capitalist industrialist models of production, which also influenced Walter Gropius and the Bauhaus.¹⁵

Today, although furniture is still where most conceptual activity happens, the focus is on aesthetics, manufacturing processes, and materials.¹⁶ Designers such as Jurgen Bey and Martí Guixé go well beyond this, using conceptual design to explore social or political issues. Bey's *Slow Car* (2007), a motorized office chair and desk enclosure is designed to question our use of time spent in cars in highly congested cities. It is not intended to be mass produced but to circulate through exhibitions and publications.



Studio Makkink and Bey/Vitra, *Slow Car*, 2007. Photograph by Studio Makkink and Bey. <http://www.studiomakkinkbey.nl>.

Martí Guixé's *Food Facility* (2005) for Mediamatic in Amsterdam was a prototype restaurant in the form of a performance space that used the Internet to outsource cooking. Customers gathered in the "restaurant," enjoying its social ambience but ordered their food from local take-away restaurants. The restaurant's kitchen was replaced by the kitchens of existing local take-aways. Customers were guided by food advisors, who provided information on food quality and estimated delivery time, and food DJs received deliveries and repackaged it for the food advisor to serve to the customer. The project experimented with the mixing of digital and analog cultures, using search engines to help reorganize traditional social events. Another project by Martí Guixé, *The Solar Kitchen Restaurant for Lapin Kulta* (2011), explores new ways of organizing a restaurant business around solar cooking technologies. Customers need to be flexible, forgiving, and adventurous; if it rains, for instance, lunch might be canceled or a cloudy sky might delay dinner.

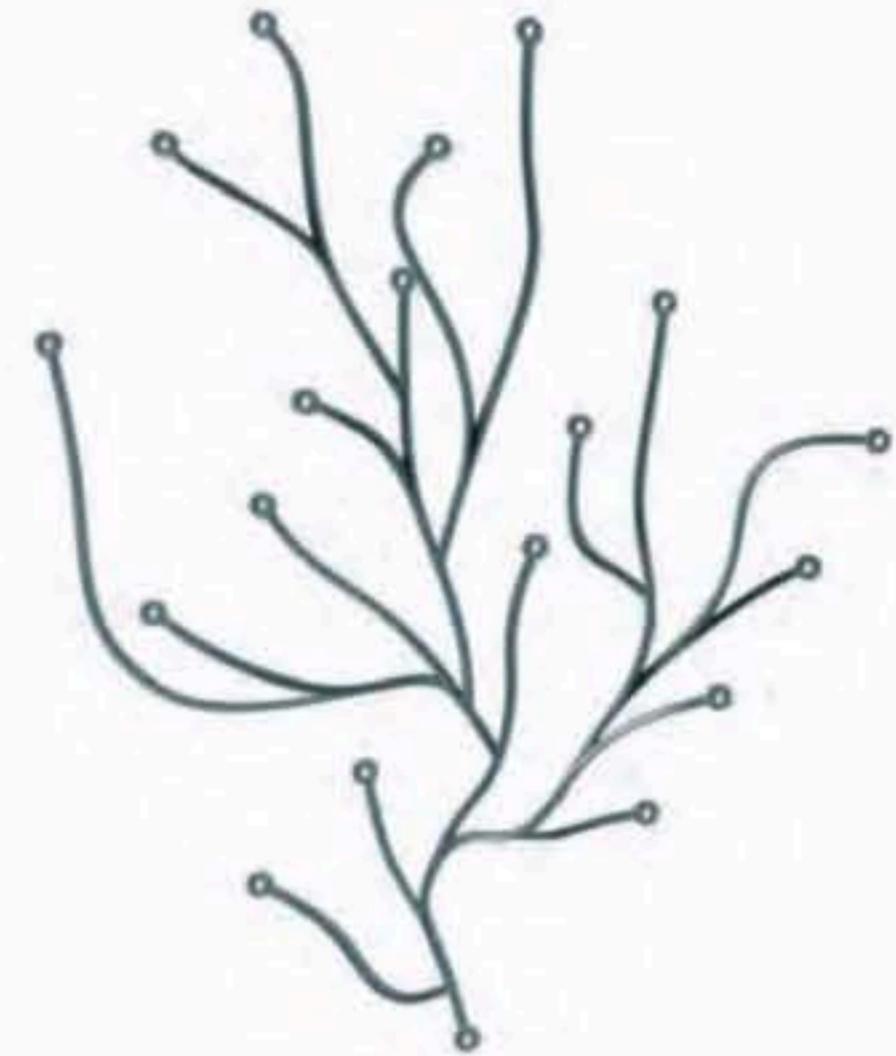


Martí Guixé, *Solar Kitchen Restaurant for Lapin Kulta*, 2011. Photograph by Imagekontainer/Inga Knölke.

There is even a well-established gallery system. Galerie Kreo in Paris works with designers including Ronan and Erwan Bouroullec, Konstantin Grcic, and Jasper Morrison as a lab for aesthetic experimentation and developing ideas that would be impossible in an industrial context. Grcic's *Champions* (2011) tables import craft techniques, aesthetics and graphics from the world of motor racing, and high-performance sports equipment into the world of furniture. Sometimes the ideas produced for these exhibitions can end up being developed elsewhere with industrial partners. The Bouroullec Brothers' *Algue* (2004), small plastic, organic-looking elements that can be linked together to form room dividers, began as an installation, only later becoming a highly successful product manufactured by Vitra and going on to sell in vast numbers.



Konstantin Grcic, *Apache*, detail, 2011, from the *Champions* series. Photograph courtesy of Galerie Kreo. © Fabrice Gousset.



Ronan and Erwan Bouroullec, *Algues*, 2004. © Tahon and Bouroullec.



Ronan and Erwan Bouroullec, *Algues*, 2004. Photograph by Andreas Sütterlin. © Vitra.

Vehicle design, too, has a strong tradition of concept cars designed to be displayed in shows to communicate future design directions and gauge customer reaction. Roland Barthes's famous essay celebrating the Citroën DS in *Mythologies* captures the magic of these visions at their high point. Buckminster Fuller's 1930s prototype Dymaxion car promoted new ways of thinking about safety and aerodynamics. More recent studies have focused on style and imagery; Marc Newson's *021C* (1999) for Ford aimed to introduce new cultural references to car design, and Chris Bangle's *GINA* (2008) concept car for BMW suggested replacing current materials with futuristic shape-shifting materials that adjust the car's aerodynamics on the move. But, although technically innovative, concept cars rarely deal with the social and cultural implications of transportation systems and consistently focus on the car as an object. One recent exception, maybe not intentionally so, is Ora-Ïto's *Evo Mobil* (2010) for Citroën, an imaginary evolution of early Citroëns such as the Traction Avant into a futuristic "personal mobility system," essentially a sedan chair—one of two designs intended to promote new thinking in the car industry about possible new directions and values.



Marc Newson, *Ford 021C*, 1999. Photograph by Tom Vack. © 2012 Mark Newson Ltd.



Chris Bangle, *BMW GINA*, 2008. © BMW AG.



Ora Ito, *Concept Car*, 2010.

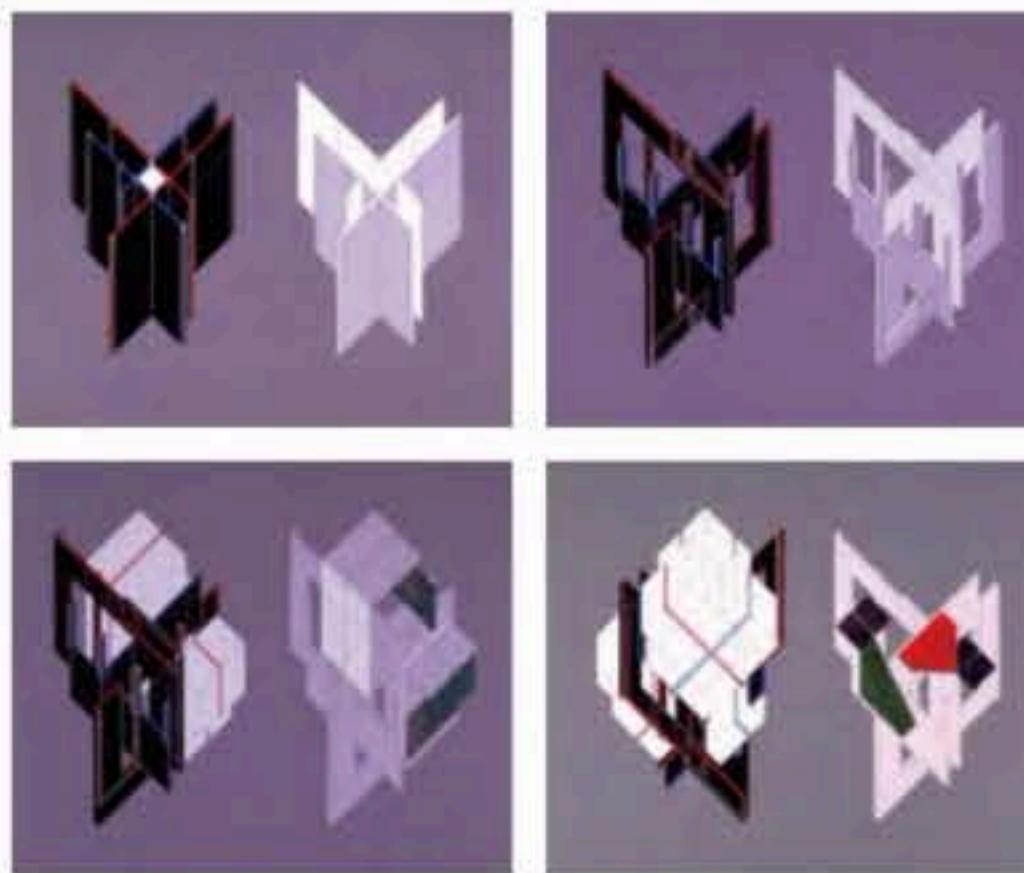
Of all the design disciplines it is probably architecture that has the richest, most diverse tradition for exploring ideas. From paper architecture to visionary design, its long history is full of exciting and inspiring examples. There is a tension between visionary architecture, which has an outward facing social or critical agenda, and paper architecture, which, though often introspective and concerned only with architectural theory, is rarely intended to ever be built. One of the most interesting examples to cross over

from idea to reality is Peter Eisenman's famous *House VI* (1975), which prioritized formalist concerns over practicalities to an extreme extent. The client later wrote about the many practical problems it had but still loved living in such a conceptual building.¹⁷ The relationship between reality and unreality is particularly interesting in architecture because many buildings are designed to be built but remain on paper due to economic or political reasons. *House VI* is unusual because it was intentionally an uncompromising piece of architectural art someone could live in, just about. It was as though the owner lived inside an idea rather than a building.

Beyond this lies the world of film design and more recently game design, which deals less with conceptual objects and more with imaginary worlds. We will return to this subject later in chapter 5.



Peter Eisenman,
House VI, east facade,
1975. Photograph by
Dick Frank. Photograph
courtesy of Eisenman
Architects.



Peter Eisenman,
House VI, 1975,
axonometric drawings.
Drawings courtesy of
Eisenman Architects.

COMMODIFIED IMAGINATIONS

In the fields of applied arts, graphics, fashion, furniture, vehicle, and architecture, conceptual design is a highly valued, mature, and interesting way of working, and it embraces one-off experiments by individual designers through to products available in shops. Unlike these fields, product design struggles with this kind of work. At least at professional level, it is usually done by students, which although laudable means it can lack the depth and sophistication experienced designers would bring to it.

Although it is possible to buy a “conceptual” skirt from Comme des Garçons or A-POC, it is not possible to buy a conceptual phone, at least not since the failed but brave efforts of Enorme in the 1980s or Daniel Weil’s batch-produced highly conceptual radios also from the 1980s. With the exception of farsighted entrepreneur designers such as Naoto Fukasawa and his +/-0 line of products, Maywa Denki’s Otamatone, Sam Hecht/Industrial



Daniel Weil, *Radio in a Bag*, 1982.



Maywa Denki, *Otamatone*, 2009.
© Yoshimoto Kogyo Co., Ltd., Maywa
Denki and CUBE Co., Ltd.



Hulger, *Plumen Light Bulb*, 2010. Photograph by Ian Nolan. Photography © Ian Nolan.

Facility’s everyday objects, and Hulger’s low-energy Plumen Light Bulb, product design remains closely aligned with market expectation and is one of the few areas in which conceptual and commercial approaches really do not mix.

Does the difference in scales of production, technological complexity, and need to address a mass market make work like this impossible in the technology industry? Since the new millennium there has been a significant increase in experimentation at the boundaries of interaction design and media art sometimes referred to as device art¹⁸ but it is usually focused on aesthetic, communicative, and functional possibilities for new media rather than visions for how life could be, and mainly takes the form of digital craft rather than future speculations.¹⁹ Artist-designer Ryota Kuwakubo is one of the most established practitioners working in this way. Similar to many people in the field of interactive devices his work sits between design and art. The devices often look industrially produced but are usually one-offs for galleries. His *Prepared Radios* (2006), programmed to filter out vowel sounds



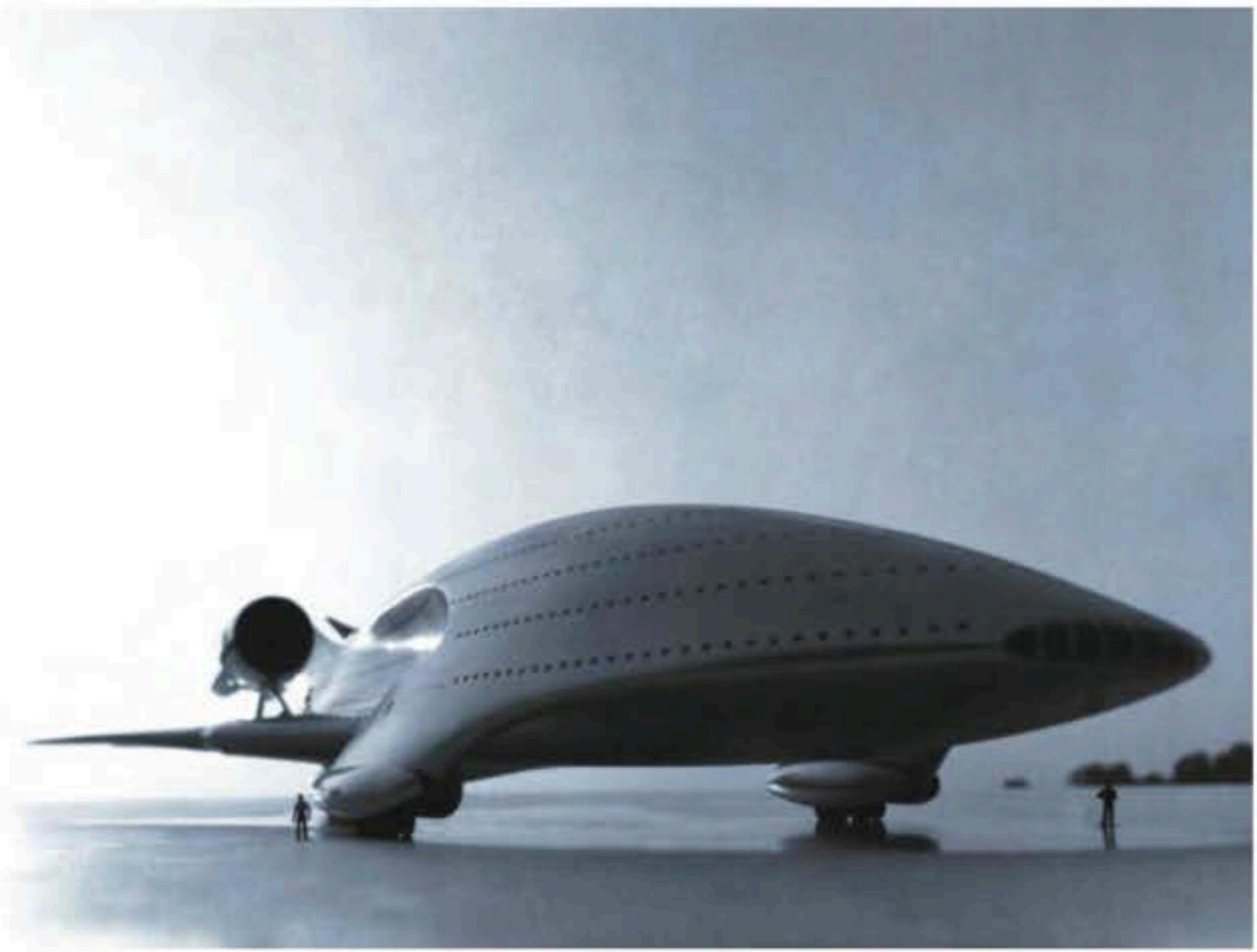
Ryota Kuwakubo, *Bitman Video Bulb*, 2005. © Yoshimoto Kogyo Co., Ltd., Maywa Denki and Ryota Kuwakubo.

from the broadcasts of local radio stations, are designed to look like minimalistic domestic radios but are handmade. Some of his projects cross over from one-offs to mass production, for example, his *Bitman Video Bulb* (2005), which plugs into the back of a TV and plays a looped animation of his Bitman character.



Philips Design Probes, *Microbial Home*, 2011. © Philips.

The technology industry does have its own tradition of conceptual design in the form of *Vision of the Future* video scenarios setting out future directions or promoting new corporate values but they are often very limited in their scope and vision. They usually feature perfect worlds for perfect people interacting perfectly with perfect technologies. Whirlpool, and especially Philips Design, are two companies that have consistently gone beyond this and successfully used conceptual projects to explore alternative visions for everyday life, which with Philips's design probes pushed the medium itself forward. Their *Microbial Home* (2011) is a proposal for integrating domestic activities such as cooking, energy usage, human waste management, food preparation, and storage, as well as lighting into one sustainable ecosystem in which each function's output is another's input. At the heart of the project is a view of the home as a biological machine.



Luigi Colani, *Passenger Aircraft*, 1977. Photograph courtesy of Colani Trading AG.

Although not intended to be mass produced it is intended to have an impact on production by introducing new values and attitudes into how companies think about the home and its consumer products. Designers Syd Mead and Luigi Colani were pioneers of this form of speculative industrial design during the 1970s and 1980s. Colani's work for Canon cameras in the 1980s introduced a form of "biodynamic" design that continues to influence camera design today.

Since Syd Mead and Luigi Colani, there haven't really been many, if any, designers who have concentrated on developing highly speculative scenarios either independently or with companies. There have been occasional surrealistic moments from designers such as Marc Newson, Jaime Hayón, and Marcel Wanders, which although mainly marketing oriented, broke away from furniture to explore their imaginative inner worlds and fantastical design objects. Some of the most striking are Marc Newson's *Kelvin 40 Concept Jet* (2003) airplane, Marcel Wanders's oversized *Calvin Lamp* (2007), and his mosaic-tiled but fully functional car for the mosaic brand Bisazza. Wanders



Mark Newson, *Kelvin 40 Concept Jet*, 2003. Fondation Cartier pour l'art Contemporain. Photograph by Daniel Adric. Photograph courtesy of Marc Newson Ltd.

claimed his oversized objects were a response to the democratization of design leaving designers with no choice but to draw from their own imagination to provide something special. These extravagantly absurd technological fantasy objects hinted at a future direction for design cut short by the global financial crash. Although decadent and often marketing exercises, for a moment, designers broke away from narrow cultural references and the limited imagination of most design shows.

Increasingly, design exhibitions are moving beyond showcasing designers and products to address more complex societal issues. The 2010 Saint Etienne International Design Biennale under the theme teleportation addressed a wide range of issues from alternative transportation to future technologies in nine interconnected exhibitions. *New Energy in Design and Art* (2011) at the Museum Boijmans Van Beuningen in Rotterdam presented alternative thinking by artists and designers around energy and MoMA's *Design and the Elastic Mind* (2008) explored interactions between design and science from the concrete to the highly speculative.

We recognize it is very difficult to finance this kind of design activity and there are limited opportunities but it is needed. It feeds the profession's imagination and it opens up new possibilities, not only for technology, materials, and manufacturing but also for narrative, meaning, and the rethinking of everyday life. Rather than waiting for commissions from industry or seeking out market gaps for new products, designers could work with curators and other professionals, independently of industry, in partnership with organizations focused on society in the broadest sense, not just business. Similar to architects, designers could take this on as a profession using some of our time for more civic purposes. This is also a role designers in academies could take on. Universities and art schools could become platforms for experimentation, speculation, and the reimaging of everyday life.



Marcel Wanders, *Antelope*, designed for Bisazza, 2004.
Photograph by Ottavio Tomasini. Photograph courtesy of
Fondazione Bisazza. <http://www.fondazionebisazza.com>.

3.

DESIGN AS CRITIQUE

For us, one of the most interesting uses for conceptual design is as a form of critique. Maybe it is because of our background in design but we feel that the privileged space of conceptual design should serve a purpose. It is not enough that it simply exists and can be used to experiment or entertain; we also want it to be useful, to have a sort of social usefulness, specifically, to question, critique, and challenge the way technologies enter our lives and the limitations they place on people through their narrow definition of what it means to be human, or as Andrew Feenberg writes, “The most important question to ask about modern societies is therefore what understanding of human life is embodied in the prevailing technical arrangements.”²

CRITICAL DESIGN

We coined the term *critical design* in the mid-nineties when we were researchers in the Computer Related Design Research Studio at the Royal College of Art. It grew out of our concerns with the uncritical drive behind technological progress, when technology is always assumed to be good and capable of solving any problem. Our definition then was that “critical design uses speculative design proposals to challenge narrow assumptions, preconceptions, and givens about the role products play in everyday life.”

It was more of an attitude than anything else, a position rather than a methodology. Its opposite is affirmative design: design that reinforces the status quo.

For many years the term slipped into the background but recently it has resurfaced as a part of growing discourse in design research,³ exhibitions,⁴ and even articles in the mainstream press.⁵ This is good but the danger is it becomes a design label rather than an activity, a style rather than an approach.

There are many people using design as a form of critique who have never heard of the term *critical design* and who have their own way of describing what they do. Naming it *critical design* was simply a useful way of making this activity more visible and subject to discussion and debate. And, although it is very exciting to see it taken up by so many people and evolving in new directions,⁶ over the years its meaning and potential has changed for us, too, and we feel it is the right moment to offer an updated view of what we think it is.

CRITIQUE/CRITICAL THINKING/CRITICAL THEORY/CRITICISM

Critique is not necessarily negative; it can also be a gentle refusal, a turning away from what exists, a longing, wishful thinking, a desire, and even a

To be human is to refuse to accept the given as given.¹

Once we accept that conceptual design is more than a style option, corporate propaganda, or designer self-promotion, what uses can it take on? There are many possibilities—socially engaged design for raising awareness; satire and critique; inspiration, reflection, highbrow entertainment; aesthetic explorations; speculation about possible futures; and as a catalyst for change.

dream. Critical designs are testimonials to what could be, but at the same time, they offer alternatives that highlight weaknesses within existing normality.

When people encounter the term *critical design* for the first time, they often assume it has something to do with critical theory and the Frankfurt School or just plain criticism. But it is neither. We are more interested in critical thinking, that is, not taking things for granted, being skeptical, and always questioning what is given. All good design is critical. Designers start by identifying shortcomings in the thing they are redesigning and offer a better version. Critical design applies this to larger more complex issues. Critical design is critical thought translated into materiality. It is about thinking through design rather than through words and using the language and structure of design to engage people. It is an expression or manifestation of our skeptical fascination with technology, a way of unpicking the different hopes, fears, promises, delusions, and nightmares of technological development and change, especially how scientific discoveries move from the laboratory into everyday life through the marketplace. The subject can vary. On the most basic level it is about questioning underlying assumptions in design itself, on the next level it is directed at the technology industry and its market-driven limitations, and beyond that, general social theory, politics, and ideology.

Some people take it very literally as negative design, anti-everything, interested only in pointing out shortcomings and limitations, which if already understood and appreciated, we agree is a pointless activity. This is where critical design gets confused with commentary. All good critical design offers an alternative to how things are. It is the gap between reality as we know it and the different idea of reality referred to in the critical design proposal that creates the space for discussion. It depends on dialectical opposition between fiction and reality to have an effect. Critical design uses commentary but it is only one layer of many. Ultimately it is positive and idealistic because we believe that change is possible, that things can be better; it is just that the way of getting there is different; it is an intellectual journey based on challenging and changing values, ideas, and beliefs. In *Do You Want to Replace the Existing Normal?*, a project we did with designer Michael Anastassiades in 2007–2008, we designed a collection of electronic products that intentionally embodied values at odds with those we would expect from products today. The statistical clock searches newsfeeds for fatalities and organizes them by form of transport in a database. The owner sets the channel to *car, train, plane*, for instance, and once the

device detects an event, it speaks out the numbers in sequence, one, two, three. . . . We imagined a world where there was a desire for products that met existential needs, reminding us of the frailty of life. Although fully functional and technically simple, we knew there was no market for a product like this because people do not want to be reminded of such things. But, that is its point: to confront us with alternative needs and hint at a parallel world of everyday philosophical products. These objects are designed in anticipation of that time. What would have to change for a need like this to emerge?



Dunne & Raby and Michael Anastassiades, *The Statistical Clock*, 2007–2008. Photograph by Francis Ware.
Photograph courtesy of Francis Ware.

REALITY FOR SALE

But it is not just about design. In fact, the power of design is often overestimated. Sometimes we can have more effect as citizens than as designers. Protests and boycotts can still be the most effective ways of making a point.⁷ We have recently become interested in the idea of critical shopping. It is by buying things that they become real, moving from the virtual space of research and development by way of advertising into our lives. We get the reality we pay for. It is in the shops, waiting to happen, waiting to be consumed. Critical shoppers, by being more discriminating, could prevent certain material realities taking shape and encourage others to flourish. Manufacturers are never sure which reality we will embrace or reject, they simply offer them up and do their best through advertising to influence our choices.

Once workers could exert power by withholding their labor, by striking; today, as we see again and again, this is less so. In today's economy it is as consumers that we have power. The most threatening act of protest for a capitalist system would be for its citizens to refuse to consume. As Erik Olin Wright points out, "If somehow it were to come to pass that large numbers of people in a capitalist society were able to resist the preferences shaped by consumerist culture and opt for 'voluntary simplicity' with lower consumption and much more leisure time, this would precipitate a severe economic crisis, for if demand in the market were to significantly decline, the profits of many capitalist firms would collapse."⁸

As we can see from the current economic crisis: "The state's role in promoting the consumption bias inherent in capitalist economies is particularly sharply revealed in times of economic crisis. In an economic downturn, governments attempt to 'stimulate' the economy by, in various ways, encouraging people to consume more by reducing taxes, by reducing interest rates so borrowing is cheaper or, in some cases, by directly giving people more money to spend."⁹

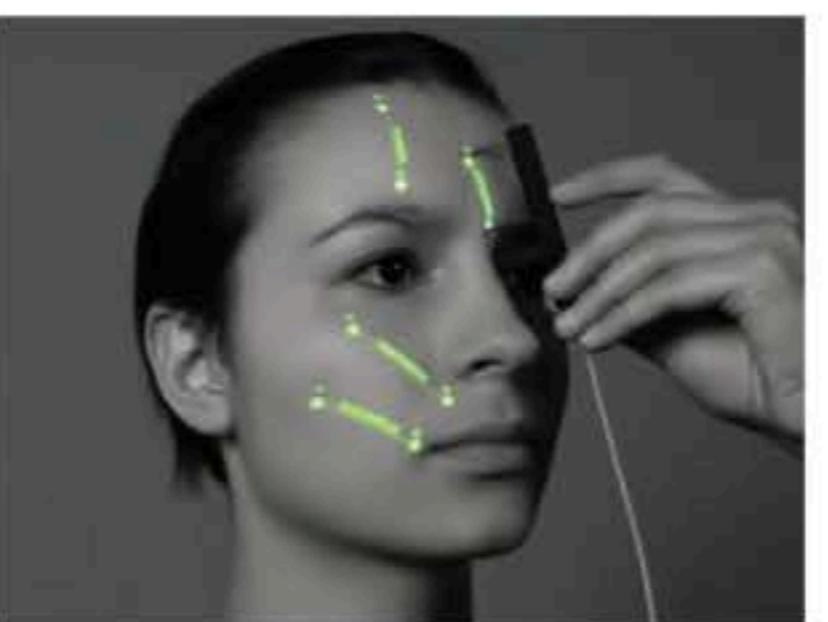
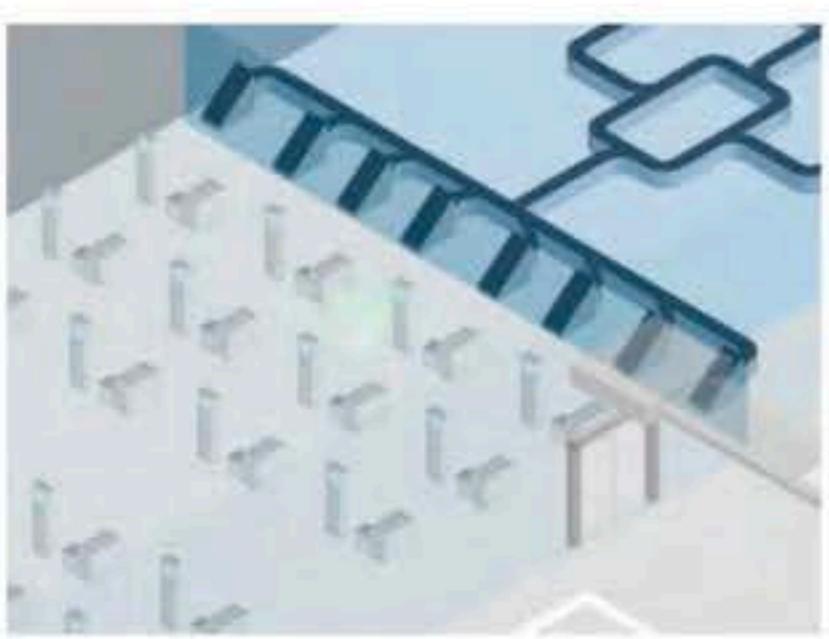
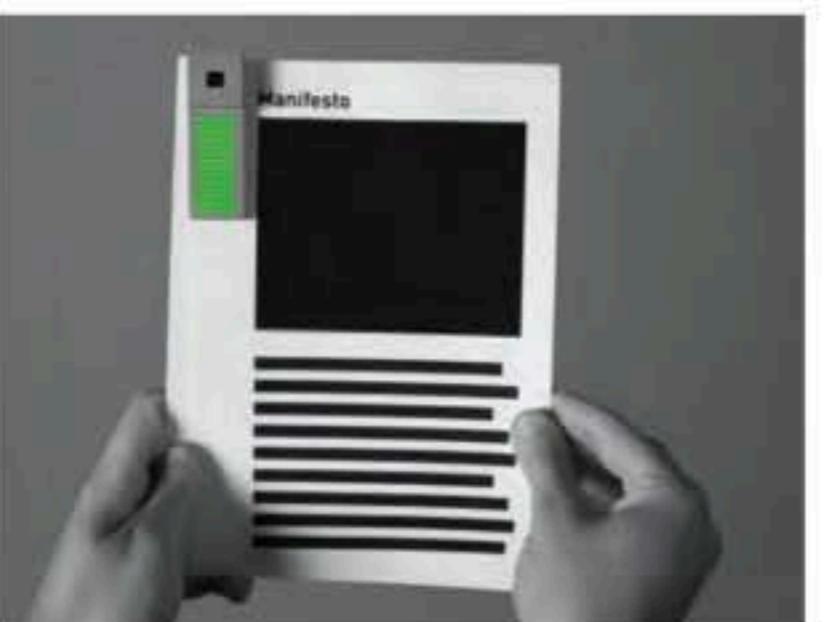
In a consumer society like ours, it is through buying goods that reality takes shape. The moment money is exchanged, a possible future becomes real. If it did not sell it would be sent back, becoming a rejected reality. In a consumer society, the moment we part with our money is the moment a little bit of reality is created. Not just physical reality or cultural but psychological, ethical, and behavioral. This is one of the purposes of critical design—to help us become more discerning consumers, to encourage people to demand more from industry and society as critical consumers. The designer is not positioned on a higher moral plane, a common criticism of critical theory,

but like everyone else is immersed in the system. Design can help raise awareness of the consequences of our actions as citizen-consumers.

DARK DESIGN: THE POSITIVE USE OF NEGATIVITY

One of critical design's roles is to question the limited range of emotional and psychological experiences offered through designed products. Design is assumed only to make things nice; it is as if all designers have taken an unspoken Hippocratic oath to never make anything ugly or think a negative thought. This limits and prevents designers from fully engaging with and designing for the complexities of human nature, which of course is not always nice.

Critical design can often be dark or deal with dark themes but not just for the sake of it. Dark, complex emotions are usually ignored in design; nearly every other area of culture accepts that people are complicated, contradictory, and even neurotic, but not design. We view people as obedient and predictable users and consumers. Darkness as an antidote to naive techno-utopianism can jolt people into action. In design, darkness creates a frisson that excites and challenges. It is more about the positive use of negativity, not negativity for its own sake but to draw attention to a scary possibility in the form of a cautionary tale. A good example of this is Bernd Hopfengaertner's *Belief Systems* (2009). Hopfengaertner asks what would happen if one of the tech industry's many dreams comes true, if all the research being done by separate companies into making humans machine readable were to combine and move from laboratory to everyday life: combined algorithms and camera systems that can read emotions from faces, gait, and demeanor; neurotechnologies that cannot exactly read minds but can make a good guess at what people are thinking; profiling software that tracks and traces our every click and purchase; and so on. He developed six scenarios that explored different aspects of this rather grim world. In one, a person wants to buy a teapot. She walks up to a machine, pays, then hundreds of images of teapots flash before her on a screen suddenly stopping on one, the one the machine decides the shopper wants from reading micro expressions on her face. In another, a person is trying to identify muscle groups in her face so she can learn to control them and not give her feelings away, voluntarily becoming inhuman in order to protect her humanity. For some this is the ultimate user-centered dream, but for many Hopfengaertner's project is a cautionary tale fast-forwarding to a time when currently diverse technologies are combined to ease our every interaction with technology.



Bernd Hopfengaertner, *Belief Systems*, 2009.

Humor is a very important but often misused element in this kind of design. Satire is the goal but often only parody and pastiche are achieved. These reduce the effectiveness of the design in a number of ways. Borrowing from existing formats, they signal too clearly that it is ironic and so relieve some burden from the viewer. The viewer should experience a dilemma: is it serious or not? Real or not? For a critical design to be successful viewers need to make up their own mind. It would be very easy to preach: a skillful use of satire and irony can engage the audience in a more constructive way by appealing to the imagination as well as engaging the intellect. Deadpan and black humor work best¹⁰ but a certain amount of absurdity is useful, too. It helps resist streamlined thinking and instrumental logic that leads to passive acceptance; it is disruptive and appeals to the imagination.

Good political comedians do this well. Probably the most celebrated artists working in this way are The Yes Men (Jacques Servin and Igor Vamos) who use satire, shock tactics, caricature, hoaxes, fakery, spoofing, absurdity, and “identity correction” (impersonating target organizations and individuals) to raise awareness of the mistreatment of ordinary people by large corporations and governments. Posing as representatives of target organizations they use corporate and governmental tactics such as spin to make outlandish claims or present fictional scenarios that are enthusiastically picked up by the popular media. Although impressive and highly entertaining, for us it is too sensational and fits in a context of media activism, performance, and theater. Their fake 4 July 2009 *New York Times* is different, though; it is subtle, beautifully crafted, and through headlines such as “Iraq War Ends” and “Nation Sets Its Sights on Building Sane Economy” showed what a different, better world might be like. Approximately eighty thousand copies were handed out in several cities around the United States.

Unfortunately, in critical design, irony can all too often be interpreted as cynicism especially in a discipline in which people expect solutions, functionality, and realism. As viewers, when we encounter critical designs we need to accept that appearances can be deceptive and similar to other cultural products; they require effort from the viewer. We explored this in the huggable atomic mushrooms part of a collection of products we designed with Michael Anastassiades in 2004–2005 called *Designs for Fragile Personalities in Anxious Times*. Each atomic mushroom was based on a nuclear test and available in small, medium, or large sizes. We were inspired by treatments for phobias in which patients are exposed to the source of their fear in increasing doses. In the case of our mushrooms, someone with a dread of nuclear

Nation Sets Its Sights on Building Sane Economy

True Cost Tax, Salary Caps, Trust-Busting Top List

By T. VERBEN

The President has called for swift passage of the Solyndra for a New Economy (S.A.N.E.) bill. The omnibus economic package includes a federal minimum wage, mandatory "True Cost Accounting," a phased withdrawal from complex financial instruments and other measures intended to impose discipline for ordinary Americans. (See highlights from on Page A10.) He also repeated earlier calls for passage of the "Save on Lobbying" bill currently making its way through Congress.

Treasury Secretary Paul Krugman stressed the importance of the bill. "Markets make great assumptions, terrible leaders, and stupid engineers," said Krugman, quoting Paul Hawken, an advocate of environmental responsibility and coauthor of "Beyond Capitalism: Paths to Sustainable Living and Why We Must Save It Coming."

"At this point, our market is in a

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Maximum Wage Law Succeeds

Salary Caps Will Help Stabilize Economy

By J.K. MALONE

WASHINGTON — After long and often bitter debate, Congress has passed legislation, already signed by the White House, that will limit top salaries to \$100,000 across the nation's wage. Tying the bill to a plan of overall reform of the U.S. economy, the bill envisions a similar effort started by President Franklin Roosevelt in 1942, which was followed by the longest period of growth for the middle class in U.S. history.

"With C.E.O.'s salaries now rising at twice the rate of high earners, there's little incentive to take big risks with shareholder money, and the economy remains in a steady growth mode," said Senator Harry Reid, one of the bill's cosponsors. "But when C.E.O. salaries can fly through the roof, there's a very strong incentive for C.E.O.s

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TREASURY ANNOUNCES "TRUE COST" TAX PLAN

By MARCUS S. BRIGGS

The long-awaited "True Cost" plan, which requires product producers to reflect the cost to society that has been ignored or left free,

Begins next month. Household items like plastic water bottles and other items which are wasted or damaged in the environment will be heavily taxed, as in many developed countries. Shopping taxes will also apply to large cars and gasoline.

"The new plan caps for a 20% percent tax on gasoline, extrapolating to the equivalent of 10 cents per gallon. In certain countries, companies are encouraged to already switching to drivers from inefficient gas vehicles to electric cars. We recently have a waiting list 200 companies for the EU," said Mike Chiles, the owner of Chiles Chevrolet. In

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IRAQ WAR ENDS



Troops to Return Immediately

By JEFF SHANAHAN

WASHINGTON — Operations Iraqi Freedom and Operation Enduring Freedom were brought to an uneventful close today with a quiet announcement by the Department of Defense that troops would be home within weeks.

"This is the best news we can get on the most unfortunate adventure in modern American history," Defense spokesman Keith Alexander said at a special joint session of Congress. "Today, we can finally enjoy peace — not the peace of the grave, perhaps, but at least peace."

As U.S. and coalition troops withdraw from Iraq and Afghanistan, the United Nations will move to perform peacekeeping duties and aid in rebuilding. The U.N. will be responsible for keeping the two countries stable, coordinating the rebuilding of hospitals, schools, highways, and other infrastructure, and increasing spawning efforts.

The Department of the Treasury confirmed that all U.S. funds used by the U.S. were paid off as of this morning, and that money previously earmarked for the war would be sent directly to the U.S.'s long Oversight Fund.

The president noted that the Iraq War had resulted in the loss of many bridges, "but one bridge with our allies runs deep," he said, "and we all know that friends longer friends for anything. Or nearly." A spokesperson for the French Ministry of Defense confirmed that France would assist the U.S. withdrawal. "The U.S. helped the Soviet Union end Hitler. We do recognize that."

In certain areas worldwide, leaders and officials gave peace. One example: George W. Bush, "Peace Myself," on Page A1.

On Wall Street, relations were mixed, with the Dow Jones Industrial Average up 10 points,收于 4,212. While IBM stock was quickly discontinued for a "break" owing of IBM's dubious connections such as Lockheed Martin and Northrop Grumman started up.

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Recruiters Train for New Life

USA Patriot Act Repealed

By MARCUS S. BRIGGS

As a ban is imposed on recruiting minors, recruiters nationwide look for new ways. Tim Davis, for example, has job-joint volunteers through Manufacturing and intervening living areas.

Beginning next month, thousands of items like plastic water bottles and other items which are wasted or damaged in the environment will be heavily taxed, as in many developed countries. Shopping taxes will also apply to large cars and gasoline.

"The new plan caps for a 20% percent tax on gasoline, extrapolating to the equivalent of 10 cents per gallon. In certain countries, companies are encouraged to already switching to drivers from inefficient gas vehicles to electric cars. We recently have a waiting list 200 companies for the EU," said Mike Chiles, the owner of Chiles Chevrolet. In

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Ex-Secretary Apologizes for W.M.D. Scare

By FRANK LARSEN

Ex-Secretary of State Condoleezza Rice, responsible for the Bush Administration's decision to invade Iraq, has admitted that she was certain that Saddam Hussein had weapons of mass destruction.

"Now that all of your human resources and systems are returning, it's important to us to reassure you and the American people, that we were certain Hussein had WMD's and that he would never launch a first strike against the U.S.," Ms. Rice told a group of wounded soldiers at a Veterans' Administration hospital yesterday.

"I want you to know that it was

annihilation would begin with *Priscilla* (37 Kilotons, Nevada 1957), the smallest huggable atomic mushroom in the series. The objects were created in a dry and straightforward way with the high attention to quality of materials, construction, and detail one would expect in a well-designed object. It is through its demeanor that one starts to wonder just how serious it is. Due to its softness it slumps, giving it a slightly pathetic look that, when you remember what it represents, begins to create conflicting emotions in the viewer.



Dunne & Raby and Michael Anastassiades, *Huggable Atomic Mushrooms: Priscilla* (37 Kilotons, Nevada 1957), 2007-2008. Photograph by Francis Ware. Photograph courtesy of Francis Ware.

Yes Men, 4 July 2009 New York Times, 2009.

Dark design is not pessimistic, cynical, or misanthropic; it is a counterpoint to a form of design that through denial does more harm than good. Dark design is driven by idealism and optimism, by a belief that it is possible to think our way out of a mess and that design can play an active role. Negativity, cautionary tales, and satire can jolt the viewer out of a cozy complacency that all is well. It aims to trigger shifts in perspective and understanding that open spaces for as-of-yet, unthought-of possibilities.

CRITIQUING CRITIQUE

Without an intellectual framework it is very difficult to advance the practice of critical design; lots of projects happen but many simply repeat what has gone before. We need some criteria that make it possible to advance this form of design through reflection and critique or at least get a sense of how the area can be refined. Conventional design's success is measured against how well it sells and how elegantly conflicts among aesthetics, production, usability, and costs are resolved. How is critical design's success measured?

Design as critique can do many things—pose questions, encourage thought, expose assumptions, provoke action, spark debate, raise awareness, offer new perspectives, and inspire. And even to entertain in an intellectual sort of way. But what is excellence in critical design? Is it subtlety, originality of topic, the handling of a question? Or something more functional such as its impact or its power to make people think? Should it even be measured or evaluated? It's not a science after all and does not claim to be the best or most effective way of raising issues.

Critical design might borrow heavily from art's methods and approaches but that is it. We expect art to be shocking and extreme. Critical design needs to be closer to the everyday; that's where its power to disturb lies. A critical design should be demanding, challenging, and if it is going to raise awareness, do so for issues that are not already well known. Safe ideas will not linger in people's minds or challenge prevailing views but if it is too weird, it will be dismissed as art, and if too normal, it will be effortlessly assimilated. If it is labeled as art it is easier to deal with but if it remains design, it is more disturbing; it suggests that the everyday life as we know it could be different, that things could change.

For us, a key feature is how well it simultaneously sits in this world, the here-and-now, while belonging to another yet-to-exist one. It proposes an alternative that through its lack of fit with this world offers a critique by asking, "why not?" If it sits too comfortably in one or the other it fails. That is why for us, critical designs need to be made physical. Their physical

presence can locate them in our world whereas their meaning, embodied values, beliefs, ethics, dreams, hopes, and fears belong somewhere else. This is where the critique of critical design should focus, on crafting its coexistence in the here-and-now and yet-to-exist, and when done successfully, providing what author Martin Amis has called "complicated pleasure."

COMPASSES NOT MAPS

Using design as a form of critique is just one use for design, as is communication or problem solving. We believe that some design should always question prevailing values and their underlying assumptions and that this activity can sit beside mainstream design rather than replace it. The challenge is to keep evolving techniques that are appropriate to the times and identifying topics that need to be highlighted, reflected on, or challenged.

In *Envisioning Real Utopias*, Erik Olin Wright describes emancipatory social science "as a theory of a journey from the present to a possible future: the diagnosis and critique of society tells us why we want to leave the world in which we live; the theory of alternatives tells us where we want to go; and the theory of transformation tells us how to get from here to there—how to make viable alternatives achievable."¹¹

For us, the fulfillment of this journey is highly unlikely if it is set out like a blueprint. Instead, we believe to achieve change, it is necessary to unlock people's imaginations and apply it to all areas of life at a microscale. Critical design, by generating alternatives, can help people construct compasses rather than maps for navigating new sets of values.

Much energy is going into developing ways of extending life but very little consideration is being given to its social and economic implications. In *When We Live to 150* (2012) Jaemin Paik asks, "how would family life change if we all lived to one-hundred and fifty or beyond?" With up to six generations living together and the possibility of huge age gaps between siblings, the traditional model of the family would change dramatically, perhaps even becoming financially unsustainable due to the burden of its large membership. Her project explores the lives and structures of future families in an era of extended life spans by tracing the story of seventy-five year-old Moyra and her sprawling contract-based family. Like the flat-share system, it would be possible to have a family-share in which people move from family to family taking on different roles to suit their changing needs as their long lives unfold. Moyra decides to renew her thirty-year marriage contract with Ted, ensuring they receive better social support and tax benefits from the state.

Aged eighty-two, Moyra's second thirty-year marriage contract with Ted expires. She decides to leave Ted and move to a "two-generation" family where she joins a new husband and a fifty-two-year-old "child." Presented through a mockumentary and photographic vignettes the project does not offer a design solution or map but serves as a tool for thinking through our own beliefs, values, and priorities when it comes to the pros and cons of extreme life extension.



Jaemin Paik, *When We All Live to 150*, 2012.

By acting on peoples' imaginations rather than the material world, critical design aims to challenge how people think about everyday life. In doing this, it strives to keep alive other possibilities by providing a counterpoint to the world around us and encouraging us to see that everyday life could be different.