



Paul Gong, Human Hyena (2014).

Design Fictions and Impossible Futures

Paul Gong

Design fictions are a powerful way to speculate about possible futures. In imagining how emerging technologies might reconfigure human, animal, and natural subjects, such fictions can be deeply provocative. In this interview, Paul Gong explores the uncomfortable prospect of tackling food waste through a form of human modification that enables a further expansion, rather than contraction, of consumer markets.

We are facing a period of increasing inequality in access to food, marked by a glaring disparity between food poverty and food excess. What is the scale of food wastage in the West, and how can speculative design help us imagine what food futures might look like?

When I was undertaking research on the Hyena Project in 2014, I read that about one-third of the food produced in the world targeted for human consumption is either lost or wasted. That is approximately 1.3 billion tons of food each year! I had thought that this statistic would be somewhat different between countries in the West and the East, but, unfortunately, it is not – our relationship to food waste seems similar. (What does differ, however, is the way we engage with food in Western and Eastern supermarkets. For example, it is unusual to have whole body parts and internal organs available in Western supermarkets, whereas it is

common in the East.) An interesting subculture that has now emerged in response to this situation is Freeganism, practiced either by individuals or groups of people who go around salvaging – or in their terminology ‘rescuing’ – usable or edible waste from being discarded. For many, this behaviour is viewed as an effective contemporary form of foraging technique. So, with around 1.3 billion tons of food waste each year, it is clear that supermarkets, restaurants, households, etc ., are regularly filling dumpsters with ‘rescuable’ food items. These subcultures are interesting to me as an artist: How can these kinds of practices be developed, and what would they look like if they were pushed to extremes of scale and normalisation?

My *Human Hyena* project is an example of how I create design fictions that evoke possible and provocative futures around important topics such as food security. Here, I brought together DIYbio enthusiasts and makers to create artwork depicting future scenarios on how to tackle the increasingly serious problem we face around food wastage. What is particularly interesting about the project for me is its focus on the special ability of the hyena species to eat rotten meat without becoming sick. In trying to find out how this capacity developed, we have imagined a fictional group of humans engaging with synthetic biology technologies to create new forms of bacteria that can modify their digestive systems to be more like that of the hyena . *Human Hyenas* would be able to change themselves to adapt to the food they eat, consuming rotten food like their scavenging counterparts. Also, we were trying to explore the possibility that new food cultures might emerge around the consumption of rotten food as a way of tackling the issue of global food wastage that we are now experiencing. For the project, I have developed a series of scenario images and designed objects to present to the public. These have now been exhibited in many galleries and museums, such as the Museum aan de Stroom in Antwerp, the Museum für Kunst und Gewerbe Hamburg, and Future Gallery in Palo Alto.

Where do these possible futures sit along the timeline of our emerging food waste crisis? Are the human modifications you propose the last resort after all attempts to reduce food waste and develop a sustainable food industry have failed? Or, do you see it as a form of niche cultural innovation?

In my projects, genetic modification, or what you might term human-enhancement, is not the last resort in response to something that has failed but is more like an alternative or provocative way to get us to start thinking about how we are going to face our food future. It might not just be as simple as reducing food waste or developing new food industries; I think emerging technologies might play an important role in offering diverse and workable solutions. For example, lab-grown meat is now being researched and might very well change our food industry. Also, engaging with our food future is not a question of changing the ‘natural’ or ‘artificial’ environments in which we live, but entails changing ourselves both mentally and physically as well, so that we fit into our changing world. For me, a form of bottom-up thinking is important, meaning the use of smaller elements that we can control in detail (like individual genetic modification) to build up subsystems (like new group behaviours), and then to construct larger systems from those (such as cultural practices). I think genetic modification might be a form of niche cultural innovation in the future – one that, through the rapid emergence of new technologies, might be more easily achieved. But this will also raise serious ethical issues, with both positive and negative consequences associated with such interventions. Do we, for example, have a right to modify and change other life-forms without permission? What about animal rights? Moreover, where is the transition from modifying organisms to designing totally new life-forms? Positive outcomes might include longer life-spans and improved strength and health. On the negative side, we might face the result of being able to live for longer, with consequences for overpopulation and all that this entails.

New research now shows that, like hyenas, humans have a very low stomach pH that may reflect an earlier history of eating carrion. Whilst the hyena is, in part, a metaphor in your work, does your project in some way explore a re-convergence of natural histories – a 'return to nature' that counters thousands of years of cultural and social divergence?

In 'Human Hyena', like with other projects of mine, I attempt to provoke a discussion about new relationships between humans, animals, nature, and emerging technologies. The types of discussion I try to provoke mainly focus on the evolution of life-forms in relation to the fulfilment of human needs and desires. Also, I would say that I have been trying to create through my work a nature that stands apart from, or independent of, natural histories: What can be considered natural (Nature) and what can be considered artificial (Unnature) in my work, and how they merge in 'Future Nature', is a key interest of mine. In 'The unnatural nature' (an earlier project), this presented as the difference between Nature with connotations of bio-conservation, natural selection, originality, reproduction, desire, and the unrestrained, and Unnature connoting techno-progressive, directed-evolution, mutation-intervention, change in a single generation, demand, and control. Maybe the explorations in 'Future Nature' might be understood as the dilemma between utopia and dystopia? (Although it is true that I think about the natural, I am more concerned with the relationship between Nature and Unnature. I might also describe Future Nature as a concern with 'new nature' or 'next nature' rather than the pursuit of a 'return to nature'.)

I am not sure whether this is particularly an interest common to artists today, or whether it reflects wider trends and new modes-of-thinking in society. I guess, artists today have a strong interest in the creation of novel futures and future possibilities. As is widely debated: Is evolution still a 'natural' occurrence (in the hands of long-standing, natural forces) or is it becoming 'artificial' (in the hands of man)? I think the latter might be true; I just imagine that because mankind can use technology to more precisely

intervene and blur the boundary between the two states, it will. I am not saying that all artists today are ‘naturally’ drawn to these new forms of man-made intervention but that artists’ interests in making interventions to shape the future can align with the way scientists think about the future. I think it would be great if scientists and artists thought more about the future together, sharing their knowledge to create concepts for future scenarios that are more plausible.

Your project points to new sets of relationships between modes of food production, distribution, storage, and consumption. What are some of these new relationships you envisage emerging, and to what effect?

In ‘Human Hyena’, I propose different fictional scenarios that connect food production and food consumption. In one, customers eat rotten food in high-class restaurants – the chef does not need to ‘cook’ the food but only decorate it for visual appeal. In the future, there may be many different kinds of these restaurants as we could now consume a wider palette of foods. This could also be an expression of the availability of new food resources previously unknown or underutilised. The restaurant could source its rotten food either from nature directly or from companies that collect and distribute rotten food from other sources specifically for this purpose. I imagine there might emerge a new kind of shop (maybe even simply a place or location) where we just ‘acquire’ food without paying for it. Moreover, the decor of dining rooms in the home or the restaurant might evolve into something quite different. Perhaps, there will be no need for kitchens with cooking facilities and refrigerators? We might just need a single space where we can store rotten food.

It is also possible that the way we consume food would change as well. For example, if we no longer have to care about food hygiene, we may have to care less about the utensils we use for eating or how we store or

protect food from decay and infection. Spoiled food has different textures, tastes, and flavours to our normal fare, and this would drive changes to our preferred culinary palette and the patterns of how and when we consume food. Although we may be able to digest rotten food in the future, we will still be biologically wired to find the smell and taste of it unpalatable. There are two design elements in the project that respond to this – the Smell Transformer and the Taste Transformer, both of which use genetically modified *Synsepalum dulcificum* (miracle berry) to release enzymes that bind sensory receptors in a way that transforms all smells and tastes into sweet ones.

Your project images suggest that, in spite of a global food crisis, food culture will remain important: We see diners in your high-class restaurant retaining an elevated sense of decorum at the dinner table. How do you imagine these radically new social and cultural norms emerging?

I think that there would be strong implications for how we think about food culture. At quite a practical level, we can ask questions such as: How would we shop for, or review, good ‘rotten’ food? Or, what dishes might be considered romantic, bar-suitable, or family-friendly in different parts of the food service industry? We can also ask how these changes might affect our sense of cultural identity: Can rotten food be considered Kosher, Halal, or Vegetarian, for example? What about issues around ‘no kill’ or ‘painless food’ (such as eating animals who have died from natural causes or where the meat is starting to decay)? We will likely find different ways to keep food we identify with as part of our food cultures, but we may also see changes in the way we start to make, serve, or even eat traditional foods. The dishes might even combine traditional foodstuffs that we would recognise, but now in rotten form.

Here, I imagine people might maintain the way they are used to eating at first but, from time to time, challenge their own definitions around food and how it is eaten. We might even start to redefine social class in terms of food consumption (a change which has a long pedigree). If we all start to eat rotten food, and we all have food to eat, will we likely develop different relationships with food that can maintain social class distinctions. We might, for example, start to eat rotten food in fine-dining settings, with certain foods becoming a new symbol for a high culture associated with particular forms of decoration, preparation, and hygiene standards. Might, for example, the most rotten food – the food that is hardest to come by and digest – become the most valued and sought after as a class-distinguishing feature? Perhaps, the longer the food decays, the greater its flavour and appeal will become!

Returning to the proposed intervention itself: The relationship between the pH and microbial diversity of our stomachs, and how a balance can be achieved between healthy and pathogenic elements in the gut microbiome, is complex. Striking a change in this balance in response to new food pressures will be an unpredictable and potentially dangerous process. How do you envisage this act of DIYbio unfolding?

In my own work, I am an artist assuming the role of a DIY-biologist, so what I describe is more of a speculative process that makes use of fictional scenarios. I think that transhumanists, DIYbio enthusiasts, as well as makers could certainly be a part, if not the centre, of such a revolution at the frontiers of human modification. I think that I have shown this to a certain degree in 'Human Hyena' as this has proven a subject with appeal to all these communities, as well as evolutionary biologists, gastrointestinal researchers, and geneticists. So, in spite of the strong citizen science aspect to this work, there is a need for scientists and other professionals or

experts to be involved to ensure these DIY approaches work effectively. For example, it would be important to include synthetic biologists and microbiologists as project consultants, so a DIY team could gain access to appropriate methods and training and to ensure that our work runs correctly in regard to health and safety concerns. Other forms of disciplinary expertise that have, are, or will be important to the DIY community include psychologists – who would be needed to analyse the mental states of those undergoing modification – and evolutionary biologists – who could collaborate together with psychologists to discuss which developmental routes are more mutually beneficial to our physical and mental condition.

Yes, we would still need to follow the logic of Science, and this would involve lots of research. But the DIY community also needs more than just disciplinary professionals: It needs people who can also work at new levels of interdisciplinarity in order to truly create new knowledge and understanding through collaboration. Disciplinary experts could collaborate together to tackle different layers of issues raised in the creation of blueprints for what I might call the ‘Human Hyena’ revolution. It is the fact that we appear to make this ‘possible future’ plausible, but also fantastical, that might make it all one day – perhaps – even possible. We are seeding the ideas, and, together, we might make it a reality. Several research institutes have even shown interest in the ‘Human Hyena’ project, and, in our discussions with them, they mentioned to us that the project offers a way to re-think the many inherited relationships between humans and food. For example, the ‘Institute For The Future’ created an event in 2015 as part of their Ten-Year Forecast called ‘Café Hyène: A Speculative Dining Experience in 2025’ in which a chef was brought in to create suitable menus for audiences to encounter this possible future.

Would it be fair to say that there is a strong case to be made for our `becoming media' in your work, i.e., the human body becoming a target for designerly interventions that convey a new message around self-determination and adaptation?

The concept behind the 'Human Hyena' project could be expressed just like that. The main purpose of this project is to offer an audience the opportunity to imagine the possibilities of unknown futures and alternative worlds that might be out there. This is done through confronting them with technologies that they will know from the news as playing a part in the new revolution on evolution. People see the use of biotechnologies in genetic modification, and so see that we are clearly changing the world around us and making it different. In 'Human Hyena', the body – and, therefore, the body of the work's audience – is the medium for those future possibilities. The possibilities for making these changes are now here, but they are certainly not all for the better. Above all, we need to get people to think deeper about the utopian and dystopian elements of these scenarios. By imagining or even witnessing the behaviours of the 'Human Hyena' (through the presentation of one such future in which artists portray themselves as being part of the work through ingestion), the audience considers the possibility of doing the same when confronted with the same scenario.

I think of this project as expressing a timeline in relation to the speculative scenarios for possible future applications involving advances in biotechnology. This timeline expresses the present, the past, and a prediction of the future. The first two facets help us reflect on our present situation today and how we got here, readily acknowledging current technological advances. The third lets us imagine the different possibilities that lie beyond our current capabilities. I see the audience as being critical in the expression of this timeline, with the work aiding them to think outside of the limits imposed by our current reality in order to reach an understanding of what might be a looming food crisis. Through this, our minds are opened up

with new ideas that embrace different possibilities for a future that might avoid it.

Author Biography

Paul Gong is a speculative designer, artist, and curator working in Taiwan. He uses scientific research as an inspiration to create design fictions that evoke possible and provocative future scenarios. He holds a BA degree in Industrial Design from the Chang Gung University in Taipei, and an MA degree in Design Interactions from the Royal College of Art in London. His work has been exhibited at MAS (Museum aan de Stroom) in Antwerp, Museum für Kunst und Gewerbe Hamburg, the Taiwan Design Museum and Yiri Arts in Taipei, USC 5D Institute in Los Angeles, and Future Gallery (in Palo Alto, London, and Guangzhou). As well as being an independent designer and artist of Ouroboros – Organic Organisms of O (Artist Collective), he is also a part-time tutor of the Department of Industrial Design at Chang Gung University and a part-time lecturer of the Department of New media Art at Taipei National University of the Arts. He was awarded the Next Art Tainan Award in 2018. More on his work can be found at <https://www.paulgong.co.uk/>.