These notes are a mix of stuff, mostly from the book The Manual of Design Fiction by the Future Laboratory and my own writing.

It is intended as course material for this class so please, ask me before sharing it.

Why Design Fiction?

Many reasons:
- fostering creative collaboration, dialogue, critical thinking
- considering future risks and opportunities in new ways, through the exploration of externalities, co-evolutions, and what-if scenarios;
- probing at biases, untested assumptions, and blind spots;
- encouraging people to think as much about the implications of anew technology, product, or service, as they do about its applications.

Weak Signals

In a 2011 interview with the *Paris Review*, William Gibson explained how he came up with the concept of "cyberspace"—introduced in his 1984 novel *Neuromancer*—via a classic instance of signal spotting.

> I remember walking past a video arcade, which was a new sort of business at that time, and seeing kids playing those old-fashioned, console-style plywood video games. The games had a very primitive graphic representation of space and perspective. Some of them didn't even have perspective but were yearning toward perspective and dimensionality. Even in this very primitive form, the kids who were playing them were so physically involved, it seemed to me that what they wanted was to be inside the games, within the notional space of the machine. The real world had disappeared for them—it had completely lost its importance. They were in that notional space, and the machine in front of them was the brave new world.

How everyday behaviours adapt to incorporate new technologies through the appropriation of gestures. Think about how small children now expect the "swipe" interaction to function in their life outside of screens.

How ordinary people modify their lived environments to accommodate new technologies. People in some cities offer a charge to electric vehicles passing by, turning their driveways into informal charging stations. Also remember that the future is accretive and old stuff doesn't justdisappear—consider how new technologies will sit sometimes awkwardly alongside what's already there.

How technologies and products are adapted for uses not originally intended. For instance, the Tech Model Railroad club repurposing MIT's experimental mainframes in the late 1950s to create early video games, or Pringles cans being used as wi-fi antennas. Next time you visit a repair shop or flea market outside of a major Western metropolis, note the intriguing knock-off and franken-artifacts only available locally.

How geographical and cultural context can shape the way technology is adopted and used. What's popular and what isn't can be wildly different depending on where you're looking. For example, it will be a long time before electric vehicles are feasible in countries with crumbling roads or inconsistent power. In societies with weak or expensive traditional phone systems, prepaid data SIMs traded on street corners can act as a form of fiat currency. China's WeChat started as a rip-off of WhatsApp, but developed in a totally different direction influenced by the Chinese government's desire for political and social control, adding so many features it now constitutes an entire trackable universe.

How creative disciplines like art, filmmaking, and design engage and play with emerging media. Keep an eye out for the artists who are looking ahead, trying to anticipate the implications of outlandish-seeming innovations becoming standard, the way Andrew Lippman's Aspen Movie Map project at MIT in 1978 gave a foretaste of Google Streetview.

What ifs

Good what-ifs inherently should be hard to land on. The difficulty is in thinking outside of one's experiences and imagining alternatives.

The ways most questions about future action are formulated -- when/where/how will we do X?-- lead our brains reflexively to draw on past experiences, paradigms, or precedents.

Shifting the frame--what if we did Y? puts us in a position where there is no obvious or clear precedent or paradigm to draw on, freeing us from our usual habits of thinking and forcing us to look beyond the limits of what we think we know.

A what-if scenario is an immersive projection into the future. A good what-if maps the edges of our ability to imagine and projects our consciousness into a more unburdened space of possibility. It can come across as both an innocent question and a provocation. It forces us to probe for possibly unknown or unconsidered factors at play, and to come at the problem or challenge at hand in an entirely different way.

Asking "How to ..." only focuses on the mechanics of the problem.
It won't help that much you arrive at a fully textured idea of the thing as it could, should, or shouldn't exist in the world.

Asking "What if..." tends to force reflection about why.

THE ELEMENTS OF A GOOD WHAT-IF

- How does this provoke and challenge existing, unspoken assumptions? Baking a timeline into your what- if can be useful.

- Does it have the capacity to be made a tangible and creative design fiction output?

- Does it have the capacity to stop everyone in their tracks? What-if scenarios are meant to stir challenging conversations and shake loose hardened perspectives.

- Is it constructive, not destructive? This is not to say that you should avoid discussion of negative implications, from public reaction to unintended consequences. Rather, engage with them by asking what they will mean.

- Does it lead to interesting questions of "then what"?

RAW MATERIAL FOR A WHAT-IF

• Weak signals gathered from your research around a general idea
or question
• Hunches about your business, product, or initiative you want to
probe and test
• Trends reports and market research
Industry and business analytical models
• Newspaper, newsletter, and magazine articles
• Photo essays or any curated selection of images around the topic
Academic studies
• Fictional news headlines informed by any of the above
• Materials or observations from elsewhere in the world
• The stuff your kids are into, or emerging practices anyone a
generation or two younger is engaged in.

Don't overfocus on enabling technology or instrumentalities at the expense of the rituals
and social practices aroused by its adoption.

AUDIENCE:

What would you like to achieve with your audience?

• build credibility and enlist support for an idea or initiative
• counter or encourage skepticism;
• cultivate alignment and create momentum and around a common vision;
• build an early-warning system for systemic or market change;
• manage unrealistic expectations;
• clarify objectives;
• identify possible outcomes, unintended consequences, and implications.

Archetypes:

When making design fictions we are not too interested about-shiny, futuristic new things
that work in almost magical ways. What we are interested in are the implications of new

technologies once they become embedded, normal, and everyday, and the ways in which the future represents itself through these more mundane things and experiences.

That means focusing our efforts on the kinds of objects we already take for granted, and how they might become part of the wider ecosystem around a technology or product.

The sorts of things made in design fiction exercises can be organized into categories of what we call archetypes--cultural artifacts, usually in some form of media so familiar as to be fixed in the collective psyche.

When selecting the archetype for your design fiction exercise, these three principles will help:

- Familiarity: Pick something that your group and audience will know well and immediately recognize. That way they'll be able to quickly extract tropes and begin generating new angles.

- Relevance: Pick something that will help you explore your area of concern, but don't be too literal or direct. If a company makes mobile phones, don't pick a mobile phone! Instead select an archetype that is part of the ecosystem around it, without hitting the nail too much on the head. Think about what the monthly bill from a mobile provider might include. Or the YouTube review video. These ancillary archetypes, rather than the details of the product, will help you explore future implications.

- Ease of production: The archetype you select will be the thing that you make--the MacGuffin that sets the conversation in motion--so consider it wisely. Picking" soft drink" is okay, as relabelling a bottle of pop is relatively simple, whereas "corporate annual report" is setting yourself up for a daunting amount of work. Think seriously about the skills of your team, access to production tools, and the time available. Things like flyers, leaflets, posters, news headlines, and packaging tend to be good starters.

A list of possible design fiction archetypes

- Product catalog
- Cover/feature spread/issue of a magazine (professional, in-flight) or newspaper
- Software bug report
- Product leaflet
- Police report
- Program guide for a theatre, cinema, or cultural festival
- Research inscriptions (laboratory notepad, white-board with weird equations)
- Medical pill notice
- Design packaging (for any sort of product, such as food, medication, toys)
- Helpdesk script of questions to ask and information to give
- Missing poster (such as for a pet or bike)
- The first page of a patent application document, including summary, patent drawings
- Product advertisement (TV, radio, print)
- Official document (e.g. FDA/ISO/IATA regulation)
- Research field notes (such as from a journalist or anthropologist)
- Customer reactions to a product or service (email, Amazon reviews)
- Travel guide
- Travel phrase book or idiomatic urban dictionary
- Religious/evangelical pamphlet
- Professional trade show event program
- Tourist map
- User-generated content formats (YouTube style unboxing video, video review)
- Video Q&A with an expert
- TV news anchor/report
- Stupid morning TV show/morning rush hour radio report
- Filming notice and film shoot location signs
- Informational pamphlet about near future diseases
- IKEA-style assembly instructions/manual
- Corporate annual report
- Sticker from some sort of club or organization
- Kickstarter campaign homepage
- Convenience store product-display case
- Warning label on a product

Tension-Patterns

Each tension pattern is not a binary or a dichotomy but rather a spectrum, or a dial that can be "tuned" in one direction or another.

Each tension-pattern includes a short description that covers the tension-pattern´s spectrum as the conflicting tendencies that motivate it (the range of the tension-pattern as a dial between two opposing tendencies).
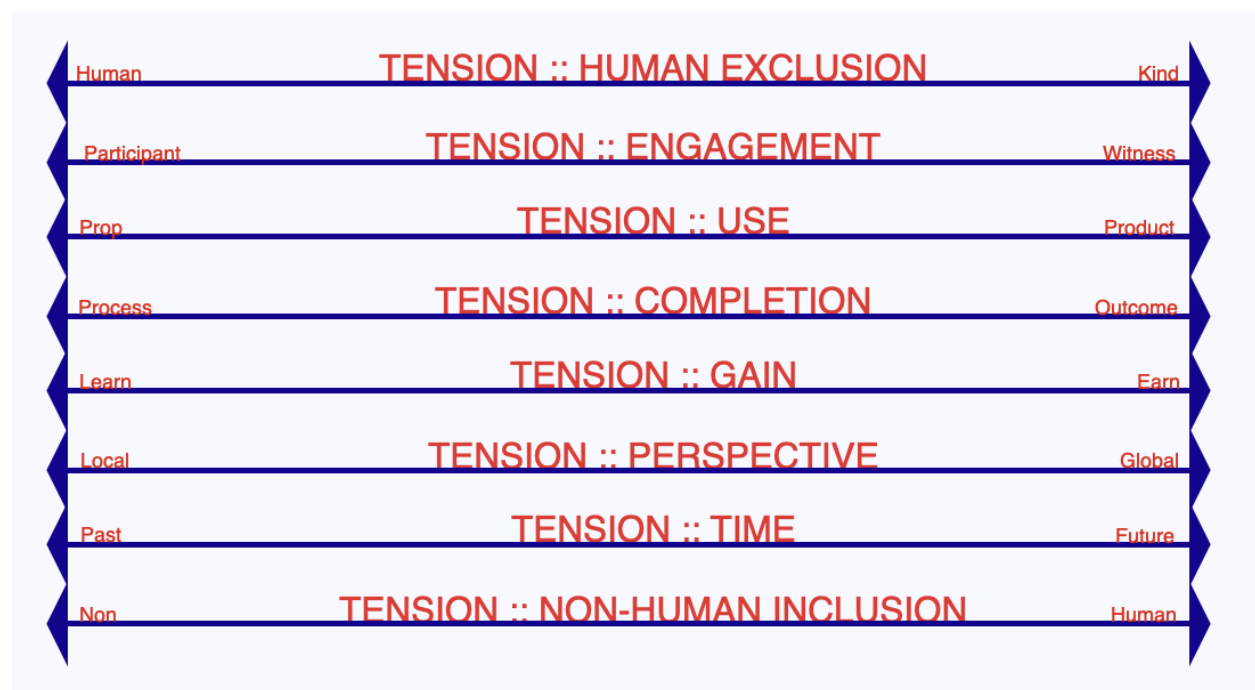
TENSION-PATTERN: HUMAN EXCLUSION

This tension-pattern calls attention to how people do not share the same experiences of inclusion and access within societies. Entire groups of people are excluded from participation in (often crucial) activities and discourse, while others face lower barriers to acceptance and visibility. Speculative designs balance this tension-pattern in the spectrum of Body – Humankind by addressing (or not) issues of exclusion affecting individual persons, groups of people, communities, ethnicities or, in an extreme scenario, the entire human race. Cases from our research project's dataset include:

Black Future Heritage Spaces – *"Two-day workshop under the theme ""Black Futurism: Creating a More Equitable Future" to illuminate pathways for solving issues that disproportionately affect Black people today. On the first day we came up with a world building activity ("Fill-in-the-future"). On the second day, participants built objects that would exist in these worlds."* [Reference Redacted for Blind Review]

Rhyl Illegal town plan –" *This proposal explores the development of a "fictional town plan" and how this might be used as a platform or working structure to assemble and represent the voices and opinions of local community groups and individuals who*

are affected or implicated by town planning but seldom offered an opportunity to comment on the organization and direction of their communities, its architecture, its history and its future." [92]

These projects show how design excludes, to a greater or lesser degree and more or less explicitly, particular individuals or groups from accessing the possibilities that design introduces. Black Future Heritage spaces highlights exclusion as a consequence of one's body and Rhyl Illegal Town Plan rises above the individual to leverage design as a tool to avoid the exclusion of local communities. HCI work where speculative designs address exclusion regarding race, gender and aging populations (respectively) are:

- Who Gets to Future? Race, Representation, and Design Methods in Africatown (2019) [89]

- Intimate Futures: Staying with the Trouble of Digital Personal Assistants through Design Fiction (2018) [80]

- Solutionism, the Game: Design Fictions for Positive Aging (2015) [19]

TENSION-PATTERN: ENGAGEMENT

This tension-pattern addresses how an audience interacts with a speculative design. Is it more appropriate to communicate to a larger audience observing the speculative design in a gallery setting, or to include a smaller group actively involved in the design process? Will people live or work with the speculative design object once completed, and how deeply are they likely to be affected? This tension-pattern is balanced within a spectrum that holds, at one extreme, the audience as detached observers and, at the other, the audience as engaged participants. Naturally, this spectrum is not a binary and there are many intermediate ways to design for audience involvement (such as improvisational methods in design research) [48]. Cases from our research project's dataset include:

Communicative Machines Speculating on Death – *"The students are prompted to work on visual and experience design related to thought-provoking themes: "death" was the one for the 2019–2020 course. The task was to design interactive and experiential devices (defined as "Communicative Machines") in a critical and speculative framework, not by conceiving possible futures but rather by reflecting on alternative presents. The main outputs are objects, installations or interactive devices intended as 'object personas´".* [Reference Redacted for Blind Review] Students work was presented in an exhibition format at the end of the course.

Peek, a game for future storytelling – *"Peek is a playable science fiction novel/game helping people explore complex narrative spaces of the present up to the year 2060. In Peek, players are "Future Archaeologists" working with a future-viewing device called "the Peek". They must report back on their future-possible glimpses to the "World Government". The game presents research into artificial intelligence (AI), machine learning and sustainability in a shared narrative format that participants can speculatively inhabit."* [Reference Redacted for Blind Review] The game was designed to engage the non-expert public in teaching and general play sessions.

These cases show how engagement with an audience is purposefully designed. "Communicative Machines" set the stage through design and later invited the audience to visit a gallery exhibition and "Peek.." was designed to be received as a playable experience and takes the audience's participation as essential during (and after) the design process. Related work within HCI that addresses Engagement through workshops, public participatory activities and domestic deployments respectively comprise:

- The magic machine workshops: making personal design knowledge (2019) [1]

- On Speculative Enactments (2017) [35]

- Material Speculation: Actual Artifacts for Critical Inquiry (2015) [93]

TENSION-PATTERN: USE

This tension mirrors Engagement from the perspective of the designer and focuses on the capacity of the speculative object to provide support to a story. Speculative designs resolve this tension-pattern within a continuous spectrum that holds, at one extreme, a design object that functions as a prop that helps to structure a story, animating a script and connecting fictional objects in the mind of the viewer and, at the other, a design object that functions as a product, creating ad-hoc narratives when a person activates the object through use. Cases from our research project's dataset include:

Future Domestic Landscape – *"The course brief asked the students to imagine domestic life 20 years from now and critically design for this future context, using the format of design fictions, producing minimum one experience prototype and a 2–3 min long video narrative. Rather than recycling the broken imagination inherent in the technocentric, flat-pack Western rendition of "the smart home", we were interested in prototyping a plurality of highly diverse, sometimes conflicting, domestic futures".* [84]

Tricky Design Probes – *"Believable design tools, which appear to be innocuous, but progressively engage designers in crossing boundaries of what should be acceptable. This is done by slowly derailing design research activities, leading to trigger reflection on the part of designers on their beliefs, practice, and the tools they use. Our probes raise issues at the intersection of design research and gender in urban service design, such as the use of pre-made algorithms to understand gendered patterns in urban movements."* [12]

These cases emphasize that the result of their design process is a (speculative) product, however, these products are activated within different contexts of use. Stories and narratives, complete with actors, scenes, motivations and actions, bring life to products, revealing meanings and understandings of the world they belong to. Future Domestic Landscape presents a collection of items that illustrate stories of the meaning of "home", while Tricky Design Probes blur the boundary between prop and product through the actual use of the probes by designers. Related work within design research leveraging design for mainly narrative purposes to designs that engage people through actual use (respectively):

- *Social Icebreakers Everywhere: A Day in the Life. (2020) [65]*

- *Metaprobes, Metaphysical Workshops and Sketchy Philosophy (2020) [36]*

- *Real-fictional entanglements: Using science fiction and design fiction to interrogate sensing technologies. (2017) [96]*

TENSION-PATTERN: COMPLETION

This tension-pattern addresses the degree of fidelity of a speculative design and its relation to the design process. This may be a fluid or contested situation depending on the motivation. Is the purpose of the speculative design object accomplished through a sketch, a prototype or a finished product? What is the primacy of making and when is it considered enough? Is the emphasis placed on the process leading to the speculative design or rather the speculative design itself once it is completed? The spectrum of this tension-pattern is a continuum that connects a focus on process at one end and a focus on outcome at the other. Cases from our dataset include:

Extreme Biopolitical Bistro – *"The Extreme Biopolitical Bistro offers a space to experience a biopolitical "care of the self" happening on our plates through collaborative dinner enactments and prototyping of elaborate data-driven menus. The Bistro works as a kitchen lab with various props performing the food research on nutrigenomics, microbiome, but also hardware, machine learning, and blockchain where anyone can come and discuss their concerns about the future".* [28] This takes the form of a pop-up event open to the general public.

Circular Geology – *"In several experiments, I generated rock strata out of the most distinctive artificial materials of our time: plastics, aluminium, and concrete. The resulting artificial rock samples represent the geological formation process of metamorphic, magmatic, and sedimentary rocks."* [Reference Redacted for Blind Review] The design process was oriented towards producing an outcome that was later exhibited.

These cases demonstrate that on-going processes and their documentation can be prioritized as outcomes. In Extreme Biopolitical Bistro, the labs are both performative events and prototyping activities, producing published documentation of the processes and the issues discussed. In contrast, Circular Geology presents objects as outcomes that invite a consideration of the open-ended processes of transformation of natural and artificial materials. Related work within design research that addresses Completion as the interplay between process and outcome includes:

- *Grand Visions for PostCapitalist Human-Computer Interaction (2018) [41]*

- *Pushing the Limits of Design Fiction: The Case for Fictional Research Papers (2016) [60]*

- *Making multiple uses of the obscura 1C digital camera: reflecting on the design, production, packaging and distribution of a counterfunctional device (2015) [74]*

TENSION-PATTERN: GAIN

Gain addresses value transactions, negotiations and exchanges embedded within speculative designs. These cases address questions of who benefits from the speculative designs and how transparent this is. Is it the designers or audiences who benefit, and how fair or equal is the gain for different groups? Is the project a commercial or a research effort? Are there clients? What is the role of money or other intangible tokens of exchange? The spectrum of this tension-pattern spans speculative designs aimed at accomplishing knowledge exclusively to speculative designs produced in exchange for a form of monetary currency and all the variations present between these two extremes. Cases from our dataset include:

In Your Hands – *"A performance and accompanying video where remote-controlled roller skates place the artist's fate in the hands of the audience, creating a situation where ethical parameters are challenged. Humour and spectacle are used to lure the participants into the thrill of the event while distracting them from what is really happening, namely a subversive social experiment which questions how far people are willing to go to seek their own enjoyment".* [63]

Man & Interior – *"Five fictional companies and their products and services were presented during the Biennale Interieur 2014 interior design trade fair in Kortrijk (Belgium). The companies were intended to provoke visitors and exhibitors to think about people's evolving needs and the ways in which future businesses could offer new types of products and services in new ways to respond to those needs".* [8]

The question of who gains from a transaction or negotiation, and the costs and wider effects, is not always straightforward, so these projects encourage an examination of the processes at work. The audience watching In Your Hands must make choices about how to use the control that has been handed over by the artist, gaining responsibility as well as power. Alternatively, Man & Interior presents a more "realistic" collection of fictional new business offerings encouraging exhibition visitors to consider the implications of these product and service concepts if launched onto the market. Related work within design research where Gain is balanced at different points of its spectrum include:

- Low Power Web: Legacy Design and the Path to Sustainable Net Futures (2020) [95]

- Do-It-Yourself Medical Devices: Exploring Their Potential Futures Through Design Fiction (2018) [81]

- The IKEA Catalogue: Design Fiction in Academic and Industrial Collaborations (2016)[23]

TENSION-PATTERN: PERSPECTIVE

Perspective centres on understanding where the impact of a design project is situated and its relation to the geographical context in which it happens. These contexts could be limited to place-based communities or extended to those whose boundary relates to other commonalities or shared practices. There may be overlaps between communities located in the same physical spaces, or separated by geography, raising questions about shared or opposing concerns. The spectrum of Perspective ranges from local to global in relation to the topic addressed by the particular speculative design. Cases from our dataset include:

Speculative Development of Bratislava – *"By creating "hyper-unrealistic" speculative collages, we tackled the thin line between the acceptable manipulative nature of advertising and the need to inform the public about private development plans in the city with transparent visuals. For most locals, it's hard to imagine what the new district composed of various projects from different companies will look like. There is no proper visualization or 3D modelling of the entire future area. Residents can only use their imagination – or perhaps, travel to the future".* [Reference Redacted for Blind Review]

Plasticful Food – *"The Plasticful project has taken facts from the present day, and projected them into a possible future, to invite audiences to imagine that Plasticful Food may be a viable waste management practice within the coming decade. As we are already consuming large amounts of microplastic incidentally, and waste management procedures are not changing rapidly enough to contain the problem of global plastic pollution, eating our plastic waste may be our only option for plastic containment in the near future. Is this a future you would like? Or would you act to avoid this future?"* [Reference Redacted for Blind Review] The project takes a global outlook on waste management practices involving plastics.

Locality can be framed as physical but it also concerns the social relations between communities within a geographical area. Speculative Development of Bratislava is concerned with local urban development, utilising the visual language used to market this rapid city development in order to critique the relationship between the vision and the reality. On the other hand, Plasticful Food highlights a global environmental problem and promotes local

understanding of the impact of daily human behaviour. Related work within design research that addresses Perspective by locating a speculative design in the spectrum between local and global includes:

- *WhatFutures: Designing Large-Scale Engagements on WhatsApp (2019) [57]*

- *Vivewell: Speculating nearFuture Menstrual Tracking through Current Data Practices (2019) [43]*

- *Avoiding ecocidal smart cities: Participatory design for more-than-human futures. (2018) [47]*

TENSION-PATTERN: TIME

This tension-pattern considers that although every speculative project is located in (and communicating aspects about) the present – the moment in which it was created - it may thematically address the past (through counterfactual stories, for example), the present (through alternative presents) or the future (through visions). The spectrum of Time stretches from the past to the future in relation to the moment when a speculative design was produced. Cases from our dataset include:

From Fiction to Action — Design in a state of exception – *"Students analyzed historical and present strategies of civil rebellion and extrapolated them into certain futures. Using narrative and speculative design methodologies the group developed new perspectives on what design can be and in which fields it may extend. We conducted this project in the summer term 2017 – to the background noise of the G20 summit in Hamburg, a big protest of neo-Nazis in Halle (+ counter protests), the global rise of right-wing politics and increasing use of smart surveillance systems. The project outcomes reflect these events and how we and the students pictured a future state of exception".* [70]

Ghosts That Walk the City Episode 1: Flights of Fancy - *"A 10-day speculative workshop was the first instalment of Ghosts that Walk the city - a narrative-based historical research project. It engaged with the unseen shadows along the Ahmedabad Heritage Walk to observe and represent the fringe, the underground and the marginal on it, culminating in an exhibition which brought together eight distinct visual narratives from 3rd and 4th-year architecture students. Using observation and speculation, this project through visual narratives explored key questions of commodity, age, power, market, authenticity, appropriation, politics, religion, control, beauty and identity and the roles they play in the construction of a grand narrative of Ahmedabad Heritage Walk. A deliberate shift from the singular narrative to identifying untold stories led to the question: 'Which stories make up 'histories'?"* [90]

This tension-pattern mirrors Perspective but deals with context in a temporal sense rather than in a spatial sense. These cases show that tensions exist around the differing types of personal and collective investment into what has been, compared to what is yet to come. "From fiction to action…" is firmly located in its present by designing a future vision that is strongly linked to it and "Ghosts…" deals ambiguously with temporality to avoid creating singular narratives. Examples of related work within design research that explicitly leverages speculative designs to address Time include:

- *Expanding Modes of Reflection in Design Futuring (2020) [55]*

- *CHI and the future robot enslavement of humankind: a retrospective (2013) [53]*

- *The Computer for the 21st Century (2002) [94]*

TENSION-PATTERN: NON-HUMAN INCLUSION

This tension emphasizes the involvement of other-than-human perspectives when making speculative designs. These projects investigate the agency of real beings such as fungi, insects or microbes, and the roles they play in alternative scenarios. Imaginary forms of life are also considered in this tension-pattern, and how they might interact with the human created world. Cases from our dataset include:

The Microbial Starter Kit – *"Microbes are the basis of our microbiome and form our immune system. However, because of the continuously increasing number of Caesarean sections, more and more children are missing out on these important microbes. By combining the knowledge of microbiology, medicine and childbirth, the microbial starter kit gives parents the prospect of passing on the mother's vaginal microbes to their child as well as strengthening the bond between them through an emotional ritual".* [Reference Redacted for Blind Review]

Equine Eyes –*"A set of design prototypes which are developed to help designers understand other nonhuman species so that they can design for and with other species. The project contains a set of wearable and useable headsets which test approaches to fostering inter-species connections with horses. The prototypes run counter to ACI's – Animal Computer Interaction- (and*

HCI's) scientism to create a set of outcomes which explore other ways of knowing, and other approaches to designing for and with other species". [Reference Redacted for Blind Review]

These cases show the complexity that arises from including non-human perspectives in human affairs. "The Microbial" attempts to bring back microbes into practices of childbirth and "Equine Eyes" focuses on building stronger human-horse connections. Related work within HCI where speculative designs serve the purpose of building narratives supporting non-human inclusion:

- Ghosts in the Smart Home (2020) [59]

- Designing with More-than-Human Food Practices for Climate-Resilience (2020) [27]

- Design for collaborative survival: An inquiry into human-fungi relationships (2018) [61]