

**PART II.**  
**ELABORATING**

# POSITIONING



**102:**

**FUTURE**



**PHILOSOPHICAL  
PILLS**

BY Betti Marenko





## Orientation – Definitions and approaches

### What are the Future Philosophical Pills?

The form of the LEXICON is The Future Philosophical Pills are a set of curated insights designed to interrogate and challenge established notions (and assumptions) around the future. As critical lenses that expand the range of concepts and images used to speculate around possible tomorrows, they amplify the capacity to think and imagine ‘futures’. Crucially, they are firmly planted in the practice of devising routes for implementation by embedding emerging insights into tangible design propositions. Thus, the Future Philosophical Pills work as diagnostic devices to cultivate imagination and assist in the process of introducing different, divergent and not-yet-existing futures into the present so to inform practice.

### Genesis

The recurring questions of any educator working with, and towards, futures in the field of design (and beyond) - How to think about, and teach, multiple futures? – assert the fundamental and infinite plurality of what is conventionally (and imprecisely) called ‘future’. This position, in turn, calls for the widest possible repertoire of concepts, ideas and notions, drawn from an equally wide range of perspectives and disciplines. What the Future Philosophical Pills contribute to this endeavour is a deck of cards, each proposing a concept/portal to think about futures.

The 40 selected terms are (mostly) extracted from, and explained through, a selected corpus of process philosophies, at present, situated largely within continental thought (1). The Pills have been packaged in a deck of cards to offer our (initial) target audience of design learners not only a playful and intuitive engagement with the practice of interrogating futures, but also to introduce an element of surprise and chance within research. Alongside the Pills deck, a second deck of Prompts (equally comprising 40 cards) is provided, offering further directives, questions, provocations and nudges that can intersect, and further complexify, the Pills.

This process has been designed to open up routes for adventurous thinking, conceptual exploration and playful ‘philosophy-in-action’ that can feed into, and scaffold, a futures-oriented design practice.

## Why Philosophy matters to design: philosophy-in-action

Conceived as a way to augment Futures Literacy for designers from a philosophical perspective, the Future Philosophical Pills are informed by a transdisciplinary (and transversal) ethos whose aim is to enact philosophy-in-action, or practical philosophy. This concerns working at the hinge of the speculative and the pragmatic to develop intellectual interrogations that can scaffold tangible interventions and material propositions, which in turn can feed back onto speculation.

▼ **Figure 1**  
Add caption.  
Workshop May 2022.  
Image credit:UAL.



It's crucial to understand that the speculative and the pragmatic are not opposed to each other: pragmatic doesn't mean practical, against the speculative/theoretical. Rather, what is advocated is a speculative-pragmatic approach that affords staying open to invention and future-crafting while remaining immersed in what is happening, the now and the how, effectively weaving speculation and pragmatism together (2). Philosophy in action is in the business of activating ideas through prototyping techniques that engage with what does not exist yet, that turn uncertainty into modes of knowing, and use uncertainty as an opportunity to create meaning by drawing on experimental post-ontological methods of inquiry, of which more below (3). Importantly, this approach does not claim to offer solutions to existing problems. Instead, it prompts ways of 'figuring out', of asking new questions, of reframing problems. Crucially, it concerns not only spaces of learning but also of un-learning [→ SEE [Essay 2: Altering Prospective Design Pedagogies, Section 2, 'Reflecting on our pedagogies', Volume 1](#)].

### Taking the Pill: a note on the 'pharmakon'

We take the image and metaphor of the 'pill' in two ways. On a first level, the pill suggests that these philosophical ideas are like active ingredients, possessing and dispensing

#### Notes:

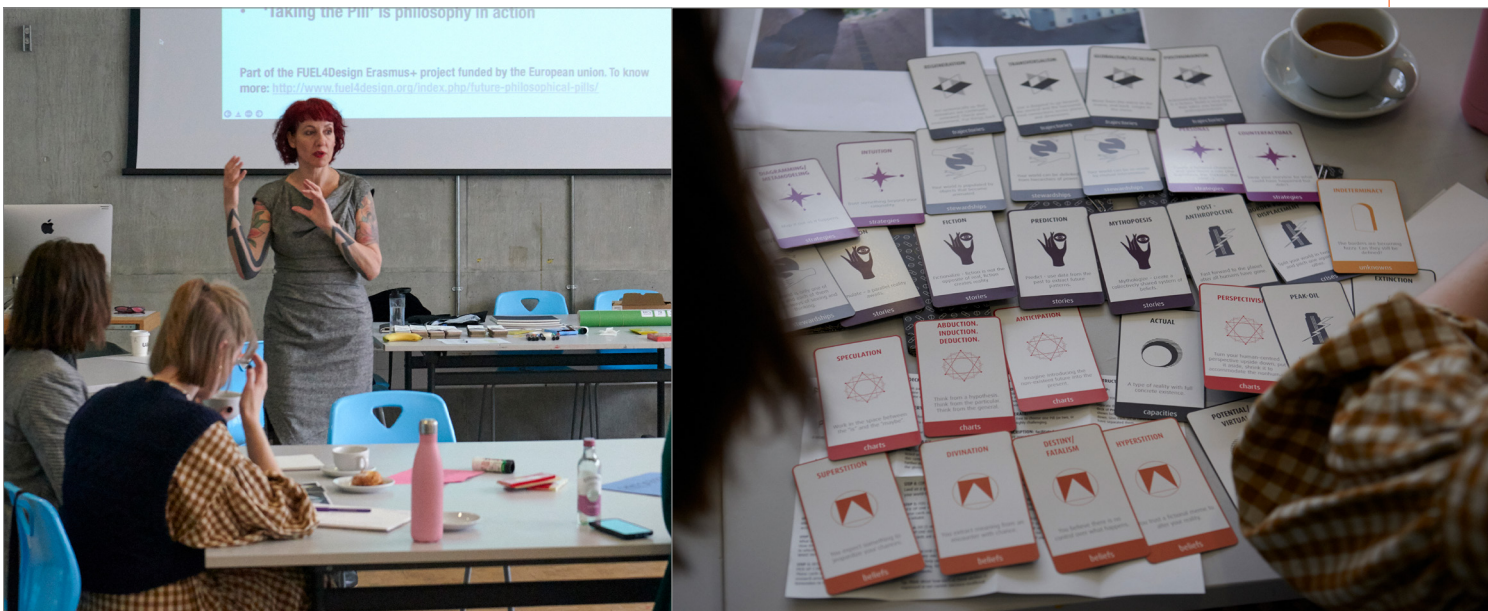
1. We are committed to expand it to a non-European corpus, and we envision a second phase of research engaging with experts on global south and indigenous thought around futures.

curative properties. Easily digestible, they produce tangible effects, and can be prescribed as a fast, reliable, effective and targeted cure to assist design students with their inquiry.

Then, a second layer evokes the ‘pharmakon’, which in Greek signifies both medicine and poison: something that can be either beneficial or disruptive, depending on dosage and mode of intake. Thus, the ambivalence inherent in the act of ‘taking the pill’ – where curative properties coexist with side effects or even with the risk of an overdose, and where the remedy may turn to poison – is a powerful and appropriate metaphor for the Pills. It reinforces their ethos of deploying philosophy in action to interrogate futures by staying with uncertainty and, indeed, by turning uncertainty into a genuine material to work with.

### Questions of method: An encounter with chance as an opportunity to make meaning

The Future Philosophical Pills use chance-based interrogations into the unknown to generate opportunities to make meaning, create inspiration and build knowledge. This ‘divinatory’ ethos is embedded in their method of use. By the random selection of one (or more) Pill card (supplemented by Prompt cards as needed), users build a random transversal collection of insights, ideas and references. The way these insights resonate with each other, producing further thoughts, is a combination of the ‘chance-based’ content, together with the individual engagement and interpretation of the participant:



co-production. In other words, your own way of interpreting the cards that chance has served you, and the content each card has to offer, become a narrative journey to help you reflect critically on your design practice and its future orientations. This chance-based method is significant for three reasons:

*It is based on a radical openness to what the future may (or may not) bring, thus counteracting ingrained risk-averse tendencies to predict, control, contain and prepare for the future (future proofing).*

▲ **Figures 2 & 3**  
Philosophical Pills workshop,  
25 March 2020.  
(Image credit:  
James Bryant).

## Future Philosophical Pills: Pills list [by cluster]

### BELIEFS:



#### Destiny / Fatalism [12]

*You believe there is no control over what happens.*

#### Divination [14]

*You extract meaning from an encounter with chance.*

#### Hyperstition [21]

*You trust a fictional meme to alter your reality.*

#### Superstition [36]

*You expect something to jeopardize your chances.*

### CAPACITIES:



#### Actual [3]

*A type of reality with full concrete existence.*

#### Possible / Probable / Plausible / Preferable [27]

*A type of reality that: might happen / is likely to happen / could happen / you wish to happen.*

#### Potential / Virtual [30]

*A type of reality on the verge of happening, but not material yet.*

#### Unexpected [39]

*A type of reality that catches you by surprise.*

### CHARTS:



#### Abduction / Induction / Deduction [1]

*Think from a hypothesis / from the particular / from the general.*

#### Anticipation [5]

*Imagine introducing the non-existent future into the present.*

#### Perspectivism [25]

*Turn your human-centred perspective upside down, put it aside, shrink it to accommodate the nonhuman.*

#### Speculation [35]

*Work in the space between the "is" and the "maybe".*

### CRISES:



#### Border politics / Displacement [6]

*Split your project into two camps and pitch one against the other.*

#### Peak-oil [10]

*Move to a landscape where extraction is no longer a resource and oil is exhausted.*

#### Extinction [16]

*Your world has been terminated.*

#### Post-Anthropocene [28]

*Fast forward to the planet after all humans have gone.*

### STEWARDSHIPS:

#### Animism [4]

*Your world is populated and becomes animated.*

#### Decolonization [1]

*Your world can be deconstructed of hierarchies of power.*

#### Hacking [19]

*Your world can be reprogrammed through intervention.*

#### Pluriverse [26]

*Your world is only one of many, each of them produced through action and thinking.*

### STORIES:



#### Fiction [17]

*Fictionalize - fiction made from elements of real, fiction created.*

#### Mythopoesis [24]

*Mythologize - create a shared system of beliefs.*

#### Prediction [31]

*Predict - use data from the past to extract future patterns.*

#### Simulation [34]

*Simulate - a parallel world.*

[Click on the Cluster name and icon for reference material and the Pill for Pill card]



## STRATEGIES:



### Conceptual Personas [7]

Create a fictional character and give them a role (the Superhero, the Trickster, the Idiot...).

### Counterfactuals [9]

Swap your storyline for what could have happened but didn't.

### Diagramming / Metamodeling [13]

Map it out as it happens.

### Intuition [23]

Trust something beyond your rationality.

## UNKNOWNNS:



### Contingency [8]

It did not need be. Could it have been otherwise?

### Indeterminacy [22]

The borders are becoming fuzzy. Can they still be defined?

### Serendipity/ Chance [33]

How can you have a random encounter?

### Uncertainty [38]

Can you observe and measure something at the same time?

## TRAJECTORIES:



### Globalism / Localism [18]

Move from the micro to the macro, and back. Linger in the meso.

### Posthumanism [29]

Acknowledge that the human is a fiction. Build a new story that takes you beyond anthropocentrism.

### Regeneration [32]

Act systemically so that resources are continually renewed. Check your environment. Put things back.

### Transversalism [37]

Use a diagonal to go beyond the vertical and the horizontal. Find connections across planes and dimensions.

## VISIONS:



### Activism [2]

Make it happen by all means necessary.

### Dystopia [15]

Enter a place so dreadful that it exists only in a gloomy future.

### Heterotopia [20]

Enter a place that exists here and now, only over there rather than here.

### Utopia [40]

Enter a place so ideal that it exists nowhere.

◀ **Figure 4**  
Pills List (by Cluster). Future Philosophical Pills, 102, FUEL4DESIGN: [Link](#) ↗

*It disrupts established academic research by leading the participant through an 'unchosen' path where serendipity trumps intention, and where one is called to co-create meaning.*

*Finally, it makes a stand in favour of uncertainty by reclaiming it from current neoliberal rhetoric where it is deployed (together with agility, resilience, mobility, flexibility) as a mode of anxiety-inducing affective governance.*

**Figures 5-8 ►**  
Philosophical Pills workshop, 25 March 2020. (Image credit: James Bryant).

The questions that this approach strives to address are the following:

**How do we conduct inquiry when conditions are volatile, times are turbulent and complexity increases?**

**How do we attend to the multiple instabilities and contingencies of a world in continuous transformation, and how do we capture this unfolding of events within our inquiry?**

**What kind of conceptual frameworks and methodological practices can be used to engage with becoming and all the mess it entails?**

For those involved in design education, these questions are even more relevant as they not only concern how to deal with increasing uncertainty, but also with the thorny matter of how we firmly knit together theory and practice, thinking and making, design and philosophies, the speculative and the pragmatic.

Let's consider for a moment the notion of the 'object' of research, positioned as something discrete, identifiable, and separate from the researcher. Or, similarly, let's consider the expression 'real-world' problems, with its assumption of a world 'out there', as if it was a homogenous entity waiting for human intervention to gain some meaning. Within the framework presented here - where what we call world is acknowledged as made by multiplicities and events in a continuous flow and thus demanding a philosophy in action approach - these notions are revealed as fictions, whose usability, not to mention their questionable ontological premises, has run its course.

In other words, what we propose is not only a methodological but also an epistemological shift. This is a shift from seeing inquiry based on the analysis of data (and the assumption that data are raw and mute, and will acquire meaning only by external human coding) to seeing inquiry and knowledge-production as 'diffractive' (to use Karen Barad's expression).

Put differently, this means to root knowledge-production in the entanglement of theory and practice, of the speculative and the pragmatic as well as of researcher and

#### **Notes:**

2. Massumi, B. (2011). *Semblance and Event. Activist philosophy and the occurrent arts*. The MIT Press; Phillip Vannini, P. (2015). (Ed.). *Non-representational methodologies. Re-envisioning research*. Routledge.

3. St. Pierre, E. (2019). 'Post qualitative inquiry in an ontology of immanence'. *Qualitative Inquiry*, 25(1), 3-16;

St. Pierre, E. (2016). 'Curriculum for new material, new empirical enquiry'. In *Pedagogical Matters. New materialisms and curriculum studies*. (Eds.) Snaza, N., et al. Peter Lang. 1-12.







research. Moreover, it highlights the important concern that, as researchers, educators, practitioners, we are never external observers but always implicated with the research we are co-producing within the flow of events.

Seen in this way, the Future Philosophical Pills are an experiment in post-qualitative methodology – a way of doing inquiry that capitalises on the unknown as a field of potential, rather than imposing a blueprint. Borrowing Maggie MacLure’s lucid analysis, this becomes an instance of what she calls the ‘serious play of rigorous experimentation’ (MacLure 2020: 4) (4) through which uncertainty finds its way into the frameworks and methods of research to produce creative encounters with the unforeseen.

### **An instance of transdisciplinary pedagogy**

Transdisciplinarity furnishes us, educators, learners, change-makers, with tools for thinking, knowing, and relating to the world so that we become able to navigate uncertain turbulent terrains. It casts in sharp relief the epistemological shift from interpreting the world as a homogenous entity – the fiction conveyed by the misleading expression ‘real-world’ problems – to attuning instead to the multiplicity of worlds we also contribute to create as researchers, educators, change-makers (5).

By establishing collaborative strategies with a plurality of fields, modes of knowledge-making, methods, and perspectives, transdisciplinarity builds an expanded vision where common concerns (shared, divergent, or both) can materialise. Design is at the forefront of this endeavour because it has the capacity to spearhead modes of speculative-pragmatic interventions that privilege the discursive. It can do so by striving to shift from an emphasis on problem solving to an emphasis on problem finding (6).

This manoeuvre, however, can be sustained only through the production of salient, novel and difficult questions outside the known boundaries of established disciplines – be them design practice, process philosophy, science and technology studies, anticipation studies or else. Hence an educational practice inspired by maieutic: a mode of inquiry driven by an ongoing co-design of the relevant questions that must be asked around matters of concern, and by a structured, escalating meta-questioning that can lead to self-transformation. Put differently, this ongoing reflective approach would position learning as a transformative practice (7).

#### **Notes:**

5. Maggie MacLure. (2020). *Inquiry as Divination. Qualitative Inquiry.*
6. Timothy Morton. (2018). *Dark ecology. For a logic of future coexistence.* Columbia University Press
7. Tom Fischer, T. & and Lorraine Gamman (Eds.). (2019). *Tricky Design. The ethics of things.* Bloomsbury; Joanna Boehnert. 2018. *Design, ecology, politics. Towards the ecocene.* Bloomsbury; Susan Yeleovich and Barbara Adams (Eds). (2014). *Design as Future-Making.* Bloomsbury; Betti Marenko. 2018. *The un-designability of the virtual. Design from problem-solving to problem-finding.* In *UnDesign: Critical practices at the intersection of art and design,* (Eds.). Gavin Sade, Gretchen Coombs and Andrew McNamara.

◀ **Figure 9**  
FUTURE  
PHILOSOPHICAL  
PILLS. Workign  
with collage in  
The ‘Hacking  
Futures – Futures  
Hacking’  
Philosophical  
Pills workshop  
at Central Saint  
Martins, UAL, 7  
February 2020.  
(Image Credit:  
James Bryant).

## Overview: Raising Questions For/To/From Futures

### How do the Philosophical Pills work?

The Future Philosophical Pills are versatile, and they can be used for a variety of purposes. Below we illustrate those that we have tested in a number of educational settings, both online and IRL.

**To activate/disrupt a current project: as critical lenses to interrogate the design brief.**

**To generate a new brief: as discursive devices, deploying the constraint of setting the scene in 2050**

**To kickstart team formation: as brainstorming support (Hybrid Futures Hackathon)**

**To rethink corporate futures: as imagination triggers (Hybrid Innovation programme @TokyoTech)**

**To explore relations across transdisciplinary content: as a connective building device (Making Waves Scientist in Residence, a collaborative project between Central Saint Martins and Tokyo Tech).**

## Workshop Example

Participants work in small groups (5–7) and discuss their visions of the future; take the Pill(s), which can be either facilitator-prescribed or random-picked; apply them as critical filters to the development of future scenarios diverging from their initial ones; as an optional they use the Prompt(s) to activate and further mobilise the ‘filtering’ and disrupting (again, facilitator-prescribed or random-picked).

### Step-by-step process

Set the scene: Imagine/anticipate 2050. How do you imagine this near future? Provide students with typologies, e.g. Wellbeing/ Community/ Technical Machines/ Scalability/ Infrastructures.

- Silent brainstorming (5 min max)
- Find images & keywords for your chosen category in 2050. Populate wall (or board if working online)
- Use images as prompt for discussion: what kind of future they evoke?

### Take the Pill(s)

- Research the Pill(s) using the material provided on the project website for each card. Conduct own supplementary research.
- Continue populating wall (or board) with relevant images, keywords and insights.
- Formulate a collective question to inform the development of a future scenario or world-building. This can be a research question, a design question, a question for/

to/from the future.

- Add one or more Prompts from the Prompts deck to insert extra filters and constraints.



### ▲ Figures 10 & 11

Philosophical Pills workshop, 25 March 2020. (Image credit: James Bryant).

## Build your future scenario

Use the insights, and material assembled by intersection Pills and Prompt to scaffold your scenario. Develop your storytelling to build a world, an 'otherwise future' or an 'alternative present'. Use the Prompt cards that inform the kind of persona/affect you are inhabiting (FEEL); the Prompt cards that ask you to create something tangible (DO), and finally the cards that help you refine the kind of world you are building, by offering social constructs and frameworks (ANCHOR). All these elements participate in the construction of your scenario. Be as granular as possible so as to be able to translate these elements into a cohesive piece of storytelling that can be presented as a tangible proposition for feedback and discussion.

### Task/Assignments:

- Research and produce a Visual essay/sound piece/or other media agnostic intervention
- Produce annotated bibliography + design precedents examples as support to research.

Visual examples (charts, links, online resources)

The two decks are available: [[→ SEE Link ↗](#)]

**INDETERMINACY**



The borders are becoming fuzzy. Can they still be defined?

unknowns

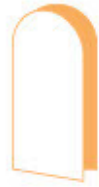
**CONTINGENCY**



It did not need be. Could it have been otherwise?

unknowns

**SERENDIPITY/  
CHANCE**



How can you have a random encounter?

unknowns

**UNCERTAINTY**



Can you observe and measure something at the same time?

unknowns

**HYPERSTITION**



You trust a fictional meme to alter your reality.

beliefs

**DIVINATION**



You extract meaning from an encounter with chance.

beliefs

**DESTINY/  
FATALISM**



You believe there is no control over what happens.

beliefs

**SUPERSTITION**



You expect something to jeopardize your chances.

beliefs

**ANTICIPATION**



Imagine introducing the non-existent future into the present.

charts

**ABDUCTION.  
INDUCTION.  
DEDUCTION.**



Think from a hypothesis. Think from the particular. Think from the general.

charts

**SPECULATION**



Work in the space between the "is" and the "maybe".

charts

**PERSPECTIVISM**



Turn your human-centred perspective upside down, put it aside, shrink it to accommodate the nonhuman.

charts

◀ ▶ **Figure 8 13**

The Pills Deck, Fuel4Des  
Philosophy Pills, 102,  
FUEL4DES

### HETEROTOPIA



Enter a place that exists here and now, only over there rather than here.

visions

### UTOPIA



Enter a place so ideal that it exists nowhere.

visions

### ACTIVISM



Make it happen by all means necessary.

visions

### DYSTOPIA



Enter a place so dreadful that it exists only in a gloomy future.

visions

### INTUITION



Trust something beyond your rationality.

strategies

### CONCEPTUAL PERSONAS



Create a fictional character and give them a role (the Superhero, the Trickster, the Idiot...).

strategies

### DIAGRAMMING/ METAMODELING



Map it out as it happens.

strategies

### COUNTERFACTUALS



Swap your storyline for what could have happened but didn't.

strategies

### SIMULATION



Simulate - a parallel reality awaits.

stories

### FICTION



Fictionalize - fiction is not the opposite of real, fiction creates reality.

stories

### PREDICTION



Predict - use data from the past to extract future patterns.

stories

### MYTHOPOESIS



Mythologize - create a collectively shared system of beliefs.

stories

## Reference Materials for Pills Cluster: BELIEFS

### **DESTINY/FATALISM:** *You believe there is no control over what happens.*

Fatalism is the belief that all events are predetermined and therefore inevitable. It is the belief in fate, which is another name for destiny: the forces that (some believe) control what happens in the future, and crucially, are outside human control.

Though the word “fatalism” is commonly used to refer to an attitude of resignation in the face of some future event or events which are thought to be inevitable, philosophers usually use the word to refer to the view that we are powerless to do anything other than what we actually do. This view may be argued for in various ways: by appeal to logical laws and metaphysical necessities; by appeal to the existence and nature of God; by appeal to causal determinism (SEP).

An important approach to destiny and fate is found in the philosophy of the Stoics (Greece, early 3rd century BC). In the Stoic cosmology everything is determined and there is a reason for everything. They are therefore deterministic. At the same time they also believe in free will. By postulating a many-dimensional network of events (cause-effects), rather than one single chain they imagine a ‘swarm’ of causes interacting with each other and humans freely participate in the determined chain of events independently of external conditions and are therefore responsible for their own actions, modulating the apparent arbitrariness of fate.

For Freud the father of psychoanalysis anatomy is destiny, referring specifically to how female biology informs her social and cultural status, and her mode of living. Against this, some feminist and new materialist theorists postulate that posthuman is a what overcomes these limitations thanks to technological hybridisation (Haraway, Braidotti). Contemplating the blossoming of an apple tree, polymath Vilem Flusser describes the process as the tree waking up to its destiny, so that not only the ‘virtual’ in it became manifest, but ‘necessity’ too was added to create the tangible reality of the buds.

#### READINGS

- Solomon, R. (2003). On Fate and Fatalism. *Philosophy East and West*, 53(4), 435-454 [www.jstor.org/stable/1399977](http://www.jstor.org/stable/1399977)
- Fuller, M and Goriunova, O. (2019). ‘Luck’. In *Bleak Joys: Aesthetics of Ecology and Impossibility* pp. 75-92, Minneapolis and London: University of Minnesota Press.
- Flusser, V. and Novaes, R. (2013). ‘Buds’. In Zielinski S. (Ed.), *Natural: Mind* pp. 113-120. University of Minnesota Press.
- Cassin, Barbara, et al. (2014) “K.” *Dictionary of Untranslatables: A Philosophical Lexicon*, by Steven Rendall et al. Princeton and Oxford: Princeton University Press pp. 531-540 [www.jstor.org/stable/j.ctt5hhntn](http://www.jstor.org/stable/j.ctt5hhntn)
- Grosz, E. (2017). *The Incorporeal: Ontology, Ethics, and the Limits of Materialism*. New York: Columbia University Press.

### **DIVINATION:** *You extract meaning from an encounter with chance.*

Divination is a way to extract knowledge about the future from signs that are interpreted by a ‘diviner’ who is able to read them, for instance, the flight of birds or the interior organs of animals, the patterns of tea leaves, or of coffee grounds. Divination can be described as an ongoing inquiry into the unknown that uses chance as an opportunity to make meaning. Divination presupposes a knowledge hidden in signs; a knowledge that cannot be known but only recognized by observing traces and by making conjectures; ultimately a knowledge without a subject (Agamben, 2015). From the 17th century onwards, modern science expels divinatory sciences from the pursuit of knowledge. The subject of science becomes the only subject of knowledge, denying existence to knowledge without subject. However, as Agamben remarks, the apparent demise of divinatory sciences, far from signalling the end of the knowledge of the unknown, has ensured its distribution to other fields somehow attuned to forms of speculative knowledge-making: psychoanalysis, arts, finance, literature, design fiction. It is worth pointing out that for the ancient Greeks the conjectural method was the domain of the goddess Metis, who not only represented divination by means of water but was also the goddess of cunning intelligence. Metis was Zeus’s first wife. Zeus swallows her as soon as she conceives Athena, and in doing so he makes Metis part of his own body of sovereignty and control, eliminating any element of unpredictability and disorder from the establishment of logos (Detienne & Vernant, 1978).

Divinatory practices are significant not because they offer definitive answers, or a clear-cut decision-making technique, but because they are a process of speculating into uncertainty that can accommodate enigmatic, equivocal, or even opposed and conflicting meanings: this ambiguity of knowledge-making must be treasured if we want to inhabit the contingency of the world (Ramey 2016).

For Deleuze, who writes about divination in his discussion of the event in Stoic philosophy, divination is ‘the relation between the pure event (not yet actualized) and the depth of bodies, the corporeal actions and passions whence it results’ (Deleuze, 1990: 163). Put differently, divination sets the ground for creation by seeking in the emergent forms the seeds of forms yet to come, of future actualizations and differentiations. In this sense divination - ‘the art of surfaces, lines, and singular points appearing on the surface’ (ibid.) - is a diagram that connects the known to the unknown. Any diagrammatic operation of divination captures (and wills) possible events by impacting on how present responses are selected, designed and implemented. The relationship between divination and diagrams is a significant one: like divination, diagrams articulate the conditions that make possible conceptual creation and the manifestation of new expressions; like divination, they do not determine directly the outcome in advance. Again, indeterminacy is key.

#### READINGS

- Ramey, J. (2016). *Politics of divination. Neoliberal endgame and the religion of contingency*. London and New York: Rowman and

◀ **Figure 14**  
Example of  
Reference  
Material  
for a Pills  
Cluster, Future  
Philosophical  
Pills, IO2,  
FUEL4DESIGN.

▶ **Figure 15**  
The Prompts  
deck, Future  
Philosophical  
Pills, IO2,  
FUEL4DESIGN.

**Figure 16 ▶**  
Philosophical  
Pills workshop,  
25 March  
2020. (Image  
credit: IO2,  
FUEL4DESIGN).

