

# Infrables

## **TITiPI**

**Miriyam Aouragh**  
**Seda Gürses**  
**Helen Pritchard**  
**Femke Snelting**

The Institute for Technology in the Public Interest (TITiPI) is a trans-practice gathering of activists, artists, engineers and theorists initiated by Miriyam Aouragh, Seda Gürses, Helen Pritchard and Femke Snelting. TITiPI convene communities to articulate, activate and re-imagine together what computational technologies in the “public interest” might be when “public interest” is always in-the-making. TITiPI develop tools from feminisms, queer theory, Free, Libre and Open Source software, intersectionality, anti-coloniality, disability studies, historical materialism and artistic practice to generate currently inexistent vocabularies, imaginaries and methodologies. TITiPI functions as an infrastructure to establish new ways in which socio-technical practices and technologies might support the public interest. TITiPI activities include: workshops, lectures, bug reporting, consultancy, reading groups, policy analysis, public events, performances, exhibitions, audits, theory making, training and publishing.

<https://titipi.org/>



**T.C.** What is the Institute for Technology in the Public Interest (TITiPI)? We are particularly intrigued by the choice of the name; a name that —along with the ones of some of your projects such as the NEEON Digital Ethics Audit— seems to echo with policy-makers vocabulary<sup>1</sup>.

**TITiPI** Yes, The Institute for Technology in the Public Interest it is quite a mouthful! TITiPI is a collaboration between several people with different backgrounds (in terms of disciplinary training but also in their modes of activism, for example). Together we articulate, contest and re-imagine the implications of *computational infrastructures* or, “the cloud”. By calling ourselves The Institute we own up to our desire for other collective structures, and for other institutional infrastructures. Our name points at a double challenge: how to resist the depletion of traditional public institutions such as hospitals, schools, academia and cultural organisations when they move their core operations to the cloud, but also ... how to rethink these structures themselves? What institutions can support the organization of collective life in a way that makes space for difference, both in terms of technology use, and for the kinds of solidarities they could develop. We are trying to do this in practice by inventing our own queer, *trans\*feminist*, decolonial institution on the go. TITiPI is also a stealth name, that sometimes allows us to interact with established forms for decision making and power play. Of course, when an official sounding name like ours is shortened into TITiPI (pronounced *tietiepie*), all suggestion of authority gets out of the window, which is intentional.

The use and abuse of policy-terms is a way for us to be in conversations with institutions, linked to our critique of how cloud computing is gutting collective operations by offering them back as rentable “services”. The term *digital ethics audit* was proposed by NEEON, a digital arts organisation based in Dundee, funded by Creative Scotland amongst others. In the context of UK non-profit structures, *ethics* and *audit* helped NEEON to frame, scale and justify the work they commissioned to TITiPI. But eventually, we turned the audit into a Counter Cloud Action Plan, provocatively transforming the quantify-all, “best practice” approach that audit culture enforces, into a call for direct action.

**T.C.** The first publication of TITiPI was a (rather unusual regarding established

practices) *bug report* on the societal impact of COVID Tracing apps<sup>2</sup>. Could you explain the reasons for this publication? How does it participate to your goal to “generate currently inexistent vocabularies, imaginaries and methodologies”, as stated on your homepage?

**TITiPI** The particular bug report that made The Institute go public was written when we realised there was no actual public debate around the introduction of COVID tracing apps, and the discussions that did happen were limited to concerns about privacy, but they did not address any of the infrastructural shifts the implementation of this technology would imply. The materials that were publicly accessible were mostly impenetrable for those who are not technical experts, including the governments that were commissioning the apps. It felt there was a gap; how to have a conversation between the people who are developing the technology, and the people who would be eventually subjected to it? The bug report we published was an attempt to engage the vocabularies and imaginaries of the communities that we are part of and involved in, including those of engineers and software developers. We wanted to say: “Hey, this cannot just be a technical discussion!”.

This bug report was a kind of prototype for the work we want to do as The Institute. Through bug reporting—the practice of submitting an account of errors, flaws, and failures in software—we can be involved with technological development that necessarily requires other modes of expertise than writing code. The practice of bug reporting is based on the idea that by distributing the testing and reporting of errors over as many eyes (hands, screens, and machines) as possible, complex software problems can be fragmented into ever smaller ones. By asking users to communicate their experiences of software breakdowns, bug reporting forces “the making of problems” through a process of questions and fragmentation. It exposes so-called “bugs” to a step-by-step temporality, and promises to make even the hardest problems small enough to be squeezable, as they eventually are reduced to nothing more than tiny bugs.

The issue with bug reporting is of course that these are by definition coercive systems, based on the assumption that reported bugs can actually be solved, especially when broken down in discrete packets. Also, issues can only be reported in response to already existing structures and processes, when “something is not working as it was de-

signed to be.” In the case of the COVID apps for example, we wondered what it would mean if something is not designed as it should be? Or even more importantly, what if it should be actively undesigned and not exist at all?

For us, bug reporting brings other concerns into the environments where technology is being developed. It is an attempt to shift frame or paradigm, to speak about the implications of *hypercomputation* right in the middle of where it happens.

**T.C.** *Software freedom* as defined by the FSF<sup>3</sup> has been for decades a counter-model to Big Tech and one can trace similar concerns—privacy for instance—with groups such as DP-3T<sup>4</sup>. However, many alternative projects now embrace and internalize many questionable principles of the cloud like *scalability*, *online mode* by default, *maximalism* or *pseudo-simplicity*. How does the rise of cloud computing challenge established frameworks of resistance? And why is it necessary to invent new modes of action?

The cloud is not just a staggering amount of data centers, but it is what happens when financialised cloud computing and mobile devices capture software production. What Seda called elsewhere “the agile turn in computing”<sup>5</sup> resulted in the collapse of the production and consumption of computation: the metricization of our grammars of action feeds directly into the production of software. In that sense, when we want to find other modes of computation, we cannot stop at changing how we consume technology or the tools we use, but we need to find ways to transform how technology is produced. And this is where the invitation to study, use and distribute that Free Software stands for, might continue to be interesting; it has the potential to address modes of use, as well as modes of production.

This said, the production of software is by now a multi-trillion dollar business. Methods and techniques such as *agile computing* and *virtualization* were developed by and for Free Software communities, and they are at the core of cloud computation. FLOSS has been bundled into many cloud services, without making these services follow the same principles. So to switch to FLOSS versions of the cloud might open some other discussions on maintenance, dependence and responsibility but contention is not anymore (if it ever was) possible along the lines of whether a piece of software has an open licence. It is much more about things

like whether digital tools technically depend on computing power provided by financialized organizations for example, or whether we can delink them from oppressive policies. Or how we can care for collective life otherwise.

FLOSS obviously has introduced and made possible to work with principles that allow for multiplicity of technical practice, but what we need now is to think of multiplicity in the sense of financial-social-ecological-technical practice ... under the clouds, it is not sufficient to multiply technical practice only, since it can inadvertently lead to multiplying the grey skies of the cloud. What we mean by that, is that when we rethink our modes of using and producing technology, we will need to rethink how we produce in general, including how we consume globally or how resources are distributed. And this includes asking the hard question whether we can actually afford this model of compute economically, ecologically, socially and in terms of governance and shared responsibility.

In *Metaphor we live by*, Lakoff and Johnson claimed that “our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature”<sup>6</sup>. Does this match your observations on how language might be instrumentally (or unintentionally) used by cloud companies and institutions to enforce social acceptance of technologies?

Languaging does matter of course. Using “the cloud” for the sprawl of industrial buildings, cooling systems, energy production, cabling, hardware, metal server racks, factories producing chips and sheet metal, mines for cobalt, gold and lithium, but also the devices in people’s pockets and their respective supply chains, all the app-developers, software engineers and data-analists, methods for making, validating and updating software, service workers in data-centers, people working in warehouses and delivery and not to forget the companies making unreal amounts of money from the financialisation of computing power ... it is a pretty smart move.

While the airy terminology obscures the dark impact of the cloud, we think that the social acceptance of cloud technologies is enforced most of all through deliberate interventions in the social fabric to make infrastructure services indispensable. On the one hand, the success of the cloud relies on the “pocket power” of smart-phone users who introduce cloud-dependency into institutions because of the convenience to use so-called “personal devices” for work. On the other hand, in times of

austerity, “moving to the cloud” promises organisations and collectives that they can optimise their modest budgets, and to rent rather than buy and maintain their own IT-infrastructure. What is being captured along the way is not only imagination and metaphors, but also our daily practices.

**T.C.** In a networked society where individual options are increasingly tight or intertwined by others choices and the computational infrastructure behind, what is ones agency to bifurcate? What are the levers to act on? Anecdote: I installed WhatsApp last week because it was too demanding to explain my contact why this might not be the best choice as a platform to communicate.

**TITiPI** To contest technological infrastructures has always been hard, but at the moment it feels near impossible because of the ubiquity and normalisation of Cloud Services. To develop “alternative” solutions, such as using Mastodon instead of Twitter, is part of the work because they open up space for different digital practices and break ground. But as we said before, the cloud is computation entangled with ecological, economical and social oppression, so calling for cloud resistance means to invoke a systemic, sustainable, queer, anti-racist, technological change.

Your example already hews that we need to be careful with believing that this can be the responsibility of individuals; you cannot do this alone. That is why we think it needs to start with holding institutions accountable. We are all part of institutions as teachers, students, citizens... so these collective structures might be a place to start.

**T.C.** Your intervention at the Tangible Cloud worksessions was the continuation of a project called *Infrables*. Could you explain what it is and why you think it is a way to address the challenges the objections to the cloud that we mentioned earlier?

**TITiPI** Our work with *infrables* started when we sit together with people to think through the scale and impact of computational infrastructures, there is always a lot of anecdote-sharing, storytelling and telling of jokes going on. This kind of playful articulations seemed almost therapeutic, facing the shifts in daily practice that are hard to grasp.

*Infrables* are a simple method for feeling out what *extractive digital infrastructures* are, and what they are doing. It starts with taking half an hour or so for sharing an experience of *digital transforma-*

*tion* with a partner who transcribes the anecdote; afterwards you switch roles. It can be a personal story or something someone else told you—there is no need to be authentic in this mutual confession booth. The transcriptions are given a title but not an author; the point is that these anecdotes could have been told by many of us. The second step is that people pick an anecdote from the growing collection, and then turn it into a song, a slogan, a fable, a poem or stand-up comedy. What *infrables* can we tell to take-down Big Tech narratives and undo their violences? Both the sharing and retelling of the anecdote builds solidarity through language; each step makes a slight intervention in the teflon surface of the cloud.

<sup>1</sup> On the question of website aesthetic, see also Dasha Ilina’s interview.

<sup>2</sup> The Institute for Technology in the Public Interest. “The Long Tail of Contact Tracing.” *GitHub*. Accessed January 20, 2023. <https://github.com/DP-3T/documents/issues/118>.

<sup>3</sup> The Free Software Foundation (FSF) is a non-profit organization founded in 1985 by Richard Stallman to promote, obtain and secure software freedom as defined by the GNU Manifesto.

<sup>4</sup> DP-3T is a decentralized, privacy-preserving proximity tracing system developed in the context of the COVID-19 pandemic.

<sup>5</sup> Seda Guerses and Joris van Hoboken, ‘Privacy after the Agile Turn’, 2017, <https://doi.org/10.31235/osf.io/9gy73>.

<sup>6</sup> Lakoff, George, and Mark Johnson. *Metaphors We Live By*. Chicago: University of Chicago Press, 1980.



*From Cloud to Crowd poster campaign* digitally printed and displayed on the streets of Dundee. Designed by Cristina Cochior, Batool Desouky for NEEON in the context of the Counter Cloud Action Plan (November 2022).

**Further readings**

*A Pluriverse of Local Worlds: A Review of Computing within Limits—Related Terminology and Practices*. n.d.. Retrieved from <https://www.bakonline.org/nl/prospections/a-pluriverse-of-local-worlds-a-review-of-computing-within-limits-related-terminology-and-practices/>

Butler, Octavia E. 1980. *Wild seed*. (1st ed ed.). Garden City, N.Y: Doubleday.

Fiebig, Tobias, Gürses, Seda, Gañán, Carlos H. et al. 2021. Heads in the Clouds: Measuring the Implications of Universities Migrating to Public Clouds. *arXiv:2104.09462 [cs]*. Advanced online publication. Retrieved from <http://arxiv.org/abs/2104.09462> (arXiv: 2104.09462)

The Institute for Technology in the Public Interest n.d.. *The long tail of contact tracing*. Retrieved from <https://github.com/DP-3T/documents/issues/118>

