Introduction to Part II

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Part II of the book is concerned with how play, civic engagement, and knowledge can be understood as intimately related. It counters the assumption that play and science are incompatible concepts and instead seeks to identify a productive interconnectedness between them. What we wish to discuss here is best described by what René Glas and Sybille Lammes call ludo-epistemologies in their contribution to this book. Building on philosopher of science Paul Feyerabend's concept of anarcho-epistemology, they use this term to make a case for forging productive relations between play, civic participation, and knowledge production.

Hailing from different fields and backgrounds, the authors in this section share a keen interest in finding ludic ways to overcome the asymmetry between the 'bastions' where knowledge is produced and daily life. All too often, we seem to live with these techno-scientific artefacts thrown at us like a *deus ex machina* or an external fate. The contributions in this section probe the use of play as a means to overcome this asymmetry and develop a critical academic stance as to how play can be a meaningful method, design, or tactic for accomplishing this.

Jessica Breen, Shannon Dosemagen, Don Blair, and Liz Barry take a very hands-on approach to this in their collective contribution *Public laboratory: Play and civic engagement*. Here, the authors talk about play as a means of civic engagement. They see play as a tactic to bring about social change, in particular by giving citizens the possibility to map pollution and other social issues. Their Public Lab, based in the USA, offers a wide range of playful tools as everyday items—such as kites and balloons—and also organizes playful gatherings to encourage citizens to take civic action. Their work is a testimony to how civic action and scientific practices can be shaped through play and shows that this can lead to the production of alternative knowledge that can empower citizens.

In her chapter *Sensing the air and experimenting with environmental citizenship*, sociologist Jennifer Gabrys also speaks about the potential of civic engagement through playful approaches. However, she reflects on site-specific citizen-sensing projects where creative means are used to engage citizens with technologies for measuring air pollution. Gabrys argues that such local and material initiatives should be approached as

material processes in which new ways of data retrieval and democratic engagement are developed that can potentially give rise to new power relations in knowledge production. Play and creativity, according to Gabrys, are important parts of such experimental processes and allow us to come to more symmetrical ways of living and *doing* knowledge.

In *Biohacking: Playing with technology*, new media scholar Stephanie de Smale takes a similar approach to the lab as an experimental site. She reflects on how quotidian experimental sites (urban communities, a building) can be turned into laboratories. De Smale shows that bastions of techno-scientific production can literally be moved elsewhere by creating alternative labs outside their traditional boundaries. The Public Lab mentioned above is an interesting example of an attempt to embed labs in daily life through DIY practices. De Smale discusses another strong case, the production of microscopic images outside the traditional laboratory, and shows how hacking as play can be an important method for the production of alternative knowledge.

The final chapters in this part could be read as a trialogue, or perhaps as a mini-debate, about how playful citizen science can be envisaged, critically examined, and understood, especially in relation to citizen science games. Although the authors do not speak directly to each other, they take positions in a highly timely debate, and their views resonate with and complement each other. The first contribution is the aforementioned text by Glas and Lammes, *Ludo-epistemology: Playing with the rules in citizen science games*. Drawing on the fields of game studies as well as science and technology studies (STS), the authors want to push the envelope with a discussion of how citizen science games are conceptualized and designed. They propose a radical move in which citizen science games become more than just top-down instruments for teaching science or feeding data back to scientists, and call instead for a reconceptualization of what people think science is and can become, what citizenship is and what play is. Taking up Paul Feyerabend's challenge that scientists are also citizens and that we need to break down boundaries in order to adopt a more democratic kind of knowledge production, they argue that this should also prompt us to rethink the potential of citizen science games. They argue that by making games that give players agency to bend or break established rules, we can bring play *into* knowledge practices.

This contribution is followed by two more chapters about the interconnectedness between play and knowledge production in games. In *The playful scientist: Stimulating playful communities for science practice*, game scholars and designers Ben Schouten, Erik van der Spek, Daniël Harmsen, and Ellis

Bartholomeus take a similar stance to Glas and Lammes. From a more designer-informed perspective, they call for citizen science games that are less one-directional and engage citizens more directly with what knowledge production is about. To accomplish this, so they maintain, games have to be designed in such a way that they hold the interest of players for a longer time span and they have to trigger players' intrinsic motivation.

In their chapter *Laborious playgrounds: Citizen science games as new modes of work/play in the digital age*, game scholar Sonia Fizek and anthropologist Anne Dippel take a critical look at the promises and pitfalls of citizen science games and how they can put citizens in the role of 'playborers,' doing work for scientists by playing and unwittingly providing free labor. The asymmetries that we mentioned in the first paragraphs of this introduction are thus reiterated instead of being destabilized or weakened, so they warn.

In summary, the contributions in this section all engage with how play and knowledge can be combined in productive ways to stimulate creativity and empower citizens. Yet, as many authors also point out, we should look at this potential in a highly critical (and maybe even skeptical) way, as play can also enforce the asymmetries between where techno-science flourishes and where it is produced when used in a non-reflective, one-directional, and unengaged way.