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Prototyping through Play: Making an Urban Satellite Region Hackathon

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Introduction

Behind the “hackathon” process lies the idea of the adoption of our natural sense of play for a more serious purpose. For many—if not most—participants in hackathons who work or study in technology-adjacent fields, a hackathon asks them, ostensibly, to spend approximately 12-24 hours (over one or two days) rushing to complete an urgent project. Often, this involves doing the same tasks they would be doing in their daily work, such as prototyping, programming, or building hardware, but with longer hours and a more intensive pace. Why then would people choose to participate? Alongside its pragmatic values—networking, gaining skills, contributing to projects with an avowedly social purpose, and a certain fraternity of technology enthusiasts—we argue the liminal nature of this work/play space also attracts and binds its adherents.

“Playbour” (Fuchs; Gregg), or the disguising of work as play, has occasioned critical attention in technology-intensive contexts of gaming, start-up cultures, and extracurricular coding events. Often entwining languages of sociality and commercialism, hackathons frequently make explicit their blurring of these boundaries. Where Google provides free food, a bowling alley, massages, and yoga classes in the hope that its employees might never want to go home, hackathons compete for their participants’ weekend time and attention with sponsored food and drinks, pool tables for breaks, the prospect of friendly competition, and newfound ‘friends’ sitting around on bean bags brainstorming crazy ideas that an employer might never greenlight. The playful elements of the event differentiate it sufficiently from work, while the work-like elements provide a structure and a sense of purpose to the time: a sequence of mini-goals throughout the weekend that make participants feel their ‘investment’ of time is worthwhile. As environments for hacking practices, hackathons foreground oscillations between serious and ludic activity, generating a continual *interplay*, force, or tension.

With this notion of play as a key motif, in this paper we explore the tensions and opportunities associated with making hackathons: the ephemeral events and products, the playbour activities, the persistent organisations, physical spaces, people, and structures that provide infrastructure for them, and the virtual layer associated with these real-world elements as they pertain to hackathon events in Western Sydney, Australia. The structure of our paper is divided into five sections: introduction, literature review, case study, discussion, and conclusion. This introduction has proposed the playful contradictions that hackathon events offer: the boundaries between physical and imagined communities, play and work, amateur and professional, as well as reality and virtuality, become blurred. Our literature review discusses recent critiques of hackathons, and attempts to plot a more redemptive orientation through an emphasis on their civic uses, which we further unfold through concepts of play-struggle and in-betweenness. The third section is a case study of our collective experiences as organizers of hackathon events, as owners of social enterprises, and as citizens of a

city that is embracing the experimentalism of these forms of making unevenly. Our observations reflect on the difficult work and engaging play involved in generating new maker communities—spanning local, global, and imaginary scales. We then discuss how places, intermediaries, and publics can be imaginatively augmented via a process of prototyping through play. We close by suggesting that these processes combine in a “play-struggle” (Söderberg) that characterizes and complicates the hackathon process, which unsettles, in addition to play/work binaries, other distinctions between physical and imagined communities, amateur and professional practices, as well as real and virtual experiences.

Literature Review: Hacking, Play-Struggles, and In-Betweenness

Critics have charged hackathons and similar events with a kind of default and uncritical complicity with regimes of neoliberalism: literal playgrounds for the cashed-up kids and corporations of the digital economy to appear to give back to society without continued responsibility for its effects—or lack thereof (e.g. Irani; Olma; Cardullo, et al. for variations on this theme). Alternatively, by encouraging free labour that remains subject to the oversight conditions of a competitive environment, for many young participants such events risk “normalising the solitude and insecurity of perpetual debut” (Gregg, 196). Without ignoring these provocations, we argue the recurring conduct of socially-oriented technology sprints do in fact produce other institutional and communitarian effects.

Hackathons, we argue, can be oriented toward the broader benefits of “civic tech,” or even “speculative civics” (DiSalvo, et al., 4980), in contrast to the characterization of hackathons as sites for the production of more individualized and profit-motivated ‘entrepreneurial citizenship’ (Irani, 813). As Robinson and Johnson describe, hackathons include a range of types, for example “entrepreneurial app contests,” which serve to “produc[e] a ready-to-use mobile device app,” and “civic hackathons,” which centre “more on sharing, animating and generating feedback on

civic open data sets” (71). Our focus is on a kind of hackathon that is more closely aligned to such civic goals, where places, intermediaries, and publics are motivated by an intent toward social openness and political possibilities. Under this conception, hackathons would serve to further a form of “speculative civics,” as “a way to explore potential, alternative, and future conditions by articulating their existence in generative forms, with a particular focus on the complications of governance and politics disposed by computational technologies” (DiSalvo, et al., 4980).

Such speculative and exploratory work also points toward the ambivalent nature of the term “hacking” itself. In *Hacking Capitalism: The Free and Open Source Movement*, Söderberg associates hacking with German poet and philosopher Friedrich Schiller’s concept of the “play-drive”: “the only force that could heal the fragmentation in society and in the human being” (161). Noting how “hacking” oscillates connotatively between prior concepts of play and labour, Söderberg goes on to introduce the notion of the “play struggle,” explaining how “playful doing, simply from being an end in itself, is destabilising to a system built on the principle that everything and everyone is a means for something else” (183). In the context of goal-driven hackathons, “systems” can refer to the organisational context of the event as much as the wider system of the political economy that Söderberg intends: in both cases, play disrupts as well as makes possible the aims of work.

If the outputs of hackathons sit in a state of limbo between initial idea and completed project, the events themselves also sit within an “in-between space”: between play and work, between amateur and professional, and between the real and the virtual. This blending of work and play conditions a potentially destabilising affective experience of categorial liminality or what Giesen has termed “inbetweenness.” Playful engagement with technology has become a naturalized process that lies at the heart of “maker” culture. By tinkering, breaking, remaking, and

repurposing technology, we learn the fundamentals of what makes it work. Even just by using tools in ways that they were not necessarily intended, we experience the extent of their capabilities.

Motivated by exploring the role of play in how we make, we have sought to pay attention to the wider forms of “inbetweenness” of hackathons that exceed linear limits of time and bounded notions of space. The intensive nature of hackathons—typically operating anywhere between half a day to a week—have, as Irani (800) and others have noted, served to produce specific kinds of making outputs, processes, and experiences. Their appeal, along with much of the critique that has followed their initial uncritical endorsement, stems precisely from this sustained intensity, which contrasts with the sub-day temporal format of meetings, classes, seminars, and workshops, and with the longer time frames usually expected of projects, semesters, and organisational lifetimes.

A further kind of inbetweenness is found in the spaces between events, and within those events, among the actors involved. If the hackathon events are points in time, the lines that connect these points are organisations, physical places, people, and structures, persisting as a semi-stable platform that contextualizes and facilitates them. Further, in terminology adopted from neuroscience via social network theory, if the hackathons are nodes in a network and these organisations, people, and places are the connecting edges, we must also pay attention to the generation of what Mejias terms “paranodality” (606), which refers to the spaces outside of what the network captures, but that also reside in between its nodes and edges. In this case, we would suggest, the network space encompasses the real-world elements of the hackathons and their surrounding infrastructure, while the paranodality includes the virtual: the augmentation of reality that technology inevitably constructs. Hackathons, we argue, are in-between spaces which evade capture and control, and which operationalise forms of play-struggle. These events have key features that may be replicated, but never fully reined in, as our case study illustrates.

Case Study: HACK Western Sydney

Our account covers the running of four weekend hackathon events over a two-year period, between late 2015 and late 2017. HACK Western Sydney¹ is a global organisation that runs biannual hackathons for social enterprises, community organisations, and individuals. Since 2011, HACK Western Sydney has been highly active in Australia, with well-attended events in Melbourne, Sydney, and Brisbane, and with increasing exposure in smaller urban centres such as Ipswich and Bendigo. The authors, comprising researchers and practitioners, have organised the Western Sydney regional offshoot since December 2015. The overall HACK organisation and its satellite, node operations—across a range of cities and countries—is based on abiding by the main principles of the network: open-source projects that are aimed at social change.

In a (playful) nod to Bratton's formidable account of sociotechnical arrangements presented in *The Stack*, we narrativize our account not chronologically, but through a similarly layered structure: the *Sketch* (a critical non-coding part of hacking); the *Event* (of the hackathon); the *Organisation* (hosting the event), and the *City* in which the hackathon and organisation are based. Our observations draw from meetings with prospective change-makers, committee meetings, lead-up events, and the conduct of the hackathons themselves; one of us was involved in founding and maintaining the organisation and all of us are involved in the city of Parramatta and its start-up scene through our shared experiences of life as citizens, workers, consumers, and active participants in other local organisations and start-ups.

Sketch

The canonical image of the hackathon is one of programmers huddled over screens, frenetically coding. While this may occupy much of the time of the hackathon event, in our view the activity of *sketching*, on paper, napkins, whiteboards, or in computer-based tools, is the playful communicative core around which processes of social hacking—coding,

researching, writing, designing, developing ideas—take place. The sketch as an ad-hoc, quick, and messy way to jot down ideas, which can then be shared and modified, socializes the digital process of *how we make*.

We can also describe how, in the context of hackathons, the sketch functions as the inscription of a mutable or hackable idea, which can be added to, amended, crossed out, copied, versioned, reinterpreted, implemented, or tested. In inviting feedback, criticism, and collaboration, it is a generative artefact driven and produced in an intensive period over food, drinks, and discussion over a meal or coffee, around a table, or via digital communication. It might then be discarded and forgotten, or refined and leveraged.

Sketching connotes creative and collaborative dimensions lost in popular inflections of “hacking.” It literalizes the sometimes-obscure technical terms of “architecture,” “design,” “prototype,” and “open source,” and as a shared activity, it communicates the semantically austere vocabulary of digital disciplines across divides of expertise. At each of the hackathon events, sketching has been the liminal experience that brings together and blurs processes of play and work. The pursuit of the “beautiful” sketch can be as intimidating and alienating as the exhibition of technical prowess, an exercise that engenders and emphasizes relations of power as much as more technical activities. To draw people in, to encourage open dialogue and participation, we have learnt to pay careful attention to the spatial arrangement of chairs and tables, to the provision of a multitude of sketchable surfaces and pliable instruments, and to cultivating a healthy disregard to aesthetic value. At the beginning and throughout the weekend event, we encouraged collaborative sketching as a way of physically realising the “open source” ethos of the hackathon event.

In practice, sketching produces a range of different group dynamics. Just as sketching ideas on a napkin in a café depends upon the expertise and playful contributions of others, our experience of the hackathon

sketching suggests it is similarly opportunistically driven, adjusting to and depending upon the range of expertise and openness to play in the group. Moreover, there are frequently differences between the sometimes-ambitious scope of sketches—particularly in the case of wireframes or ambitious software architecture—and their eventual materialization at the end of the event. One of our challenges, as we discuss further below, has been the recruitment of experienced developers. This has meant that hackathon teams often produce attractive ideas sketched on paper that cannot be realised in practice. For example, if a project was to be an Android app, but no one at the hackathon has experience developing for that platform, the idea either has to be abandoned or reconceived. An idea might have to be scaled down if fewer people are available to work on it than expected. Or two projects that share similarities might need to be combined with a single, new focus if there are only enough skilled participants in the room to develop one or the other.

Conversely, and partly through our own organisational design, the temporal and participatory constraints of the hackathon event also limit the parameters of play or experimentation through the sketching process. Augmentation of the imagination always exceeds the limits that are not only temporal (over a hackathon period), but participatory as well (based on who is assembled in the room and online for that time). While HACK Western Sydney is, on the one hand, deeply embedded in a particular place and time, digital projects, on the other hand, are not (at least explicitly) so constrained. As such they are often deployed in or aimed at a very different community than the one in which they are born.

This produces well-documented biases of gender and race in technology artefacts (Zou and Schiebinger; Hankerson, et al.) and suggests significant structural and artificial constraints on the scope of play generally. Blamed for the failure of many products from Silicon Valley, software development methods frequently fail to take into account the needs of those excluded from the design process, or included only through the limited frame of reference of “user testing.”

In the case of HACK Western Sydney, community members involved in development are less likely to be wealthy, white, or from English-speaking backgrounds, but they still may be developing technological “solutions” for problems with which they have little direct experience. Recent such examples from HACK Western Sydney projects include a crowdfunding platform for homeless people, or a wayfinding application for inhabitants of Bangladeshi slums. Even a project that is not aimed at users from such a narrowly-defined demographic is still likely to be used by people whose needs and expectations the developers cannot easily anticipate, and the format of a single-weekend development event does not lend itself to user testing or market research. This decoupling of physical, real space and virtual, technology-deployment space thus creates another experience of liminality or disjunction. The very limits of play (both temporal and participatory) always coalesce with freedom and experimentation, with possibilities for both affirmative or deleterious effects.

Event

As the example of sketching shows, the parameters of a hackathon’s orchestration sets the parameters for whether and how play takes place, and its tenuous affective and substantive relationship to work. As an event, it *intermediates* work and play. In the case of HACK Western Sydney, we were encouraged to start the event in Western Sydney after several of us attended a similar event in Sydney’s Central Business District (CBD). The Sydney event was well-populated with social change champions and prospective hackers, and the project we were collaborating on was grounded in Western Sydney, aimed at residents of a low socioeconomic suburb. After the event, we discussed how it would be a good opportunity to replicate a similar event in Western Sydney. This had several motives: to establish a hackathon that was more accessible to residents who are potential beneficiaries of the hackathon; to understand how hackathon models adapt in different locations; and to examine more closely what new forms of capacity-building and community arise.

In the earliest iterations of the HACK Western Sydney events, we followed the hackathon model set forward by the international HACK organisation. This consisted of a series of clearly defined and structured lead-up events (information evening, ideation night) followed by a weekend that was characterised by pitching a project, refining a “minimal viable product,” and working in separate, competitive groups to complete these by the final afternoon, when they were to be judged by an external panel. The organisation also promotes use of various staples of the technology industry, such as Agile programming, communication via Slack, and depositing of the projects on GitHub.

Over time, we decided to steer the HACK Western Sydney events to better reflect the needs and expectations of the local community. Without a large pool of advanced developers already familiar with programming culture, reliance on Agile methods, Slack (a team messaging tool), and GitHub (a software repository) imposes an additional learning curve. The distances that many in Western Sydney have to travel to attend impose a further burden that has been alleviated by combining the multiple pre-hackathon evenings into a single event. As a response to this, and to the desires of many who have participated, after the first event we removed its competitive element. The HACK events have never been as competitive as some other hackathons, as there are no large prizes up for grabs, no secrecy about the project plans, and no prohibition about building on earlier work or beginning before the actual weekend. We also found that the pre-hackathon “ideation” night helped to avoid too great a sense of competitiveness, as the projects’ champions “pitch” their ideas, receive feedback from all present, and form small brainstorming groups that often were not, in our events, composed of the same people who would work on that project on the hackathon weekend itself.

Over time the competitive element of HACK Western Sydney has decreased even further, as we noticed that the boundaries between “teams” became blurred. More experienced developers moved between projects to assist multiple groups, and people with specialized skillsets created shared assets like databases or artwork that could be used by all

of the teams. As the organising committee, we explicitly encouraged this collegial approach. After the first event, we also abandoned the invitation of external critics to “judge” the projects, and eventually transitioned the “judging” session to something more oriented towards show-and-tell and peer review. We noticed this format produced a distinctly more relaxed atmosphere, and have continued to stick with it.

At the most recent event in June 2017, we experimented with the more deliberate inclusion of some programming training for those attendees who wished to improve their coding skills. Several one-to-two-hour structured learning sessions were run during the Saturday using the Processing programming language to generate images and animations. Participants were gradually stepped through interactive exercises to a point where they could generate procedural artwork for use as logos in the various hackathon projects. Though we did not design the session for this purpose, these exercises and their outputs performed precisely the kind of sketching we discuss above, producing sample designs and logos that other teams were able to use in their projects. We intend to continue with the integration of code clinics into future events, another in-betweening of consumption and production that departs from the performative conventions of the hackathon model, but one entirely consistent with the needs and interests of the Western Sydney maker community.

Organisation

We ran all but the first of the hackathons at the offices of The Incubator², a Parramatta-based social enterprise that provides community-oriented software development and co-working facilities. Since its inception in 2012 it has developed open-source digital platforms, community-oriented events, and start-up programs for social enterprises. It contributes actively to the local urban social enterprise scene, contributing to and hosting a range of meet-up and hackathon events. As an organisation with day-to-day operating expenses and challenges, it

has been able to participate in the enthusiasm that often attends individual hackathon events, while also witnessing how these events may contribute to the longer-term development of urban ecologies.

In addition to hosting the event, as a local organisation, The Incubator provides a crucial further intermediating platform that supports, socially and technically, the hackathon's outputs. It is a place where: research can be undertaken and shared, together with lived experience, prior to the event taking place, to inform development; people can develop their innovation and technology toolkit through meetups and code clubs throughout the year; the models and prototypes developed at a hackathon can continue to be developed into a minimum viable product to attract real investment; and existing organisations can collaborate, or a new organisation can be formed, to deliver the real potential of the project.

The Incubator was created following the co-founder's participation in government "think-tanks" and "community consultations" at Federal and Local Government levels, and attendance at "hackathons" in 2009-2010². The Federal government's "Government 2.0 taskforce" and Local government's "eParramatta" initiatives in 2009-2010 resulted in two quite different outcomes. The Government 2.0 taskforce spawned "GovHack," (<https://www.govhack.org/> (<https://www.govhack.org/>)) which is now the world's largest open government hackathon. In contrast, the "eParramatta" initiative led to the formation of government committees and working groups that had little community participation or visible tangible outcome.

At this time the Australian chapter of the Social Innovation eXchange, AuSIX, was formed, and their inaugural Australian social innovation camp was held as a hackathon by another name. Over the course of that weekend, the two winning entries developed prototype websites to welcome refugees and connect them into local communities on the one hand, and empower volunteers with micro-volunteering opportunities on the other. These are two themes that commonly arise at Australian hackathons to this day.

Influenced by the famous distinction between the “cathedral” and “bazaar” models of software development (Raymond), and frustrated by their experience in the “cathedrals” of traditional law firms, the co-founder resolved to create a space that could provide a “bazaar” for social innovation in Parramatta. The enterprise developed to address the slow progress in influencing public policy through traditional means, using the direct action and activism of the “social hacker movement” emerging from free and open-source software (FOSS) circles. The Incubator also provided a technology platform and team that can help accelerate the development of innovation both over the course of a hackathon weekend, and subsequently into a minimum viable product. The platform was developed in response to the common recurring themes at hackathons relating to volunteering, fundraising, communications, and matching wants and needs.

While hackathons generally apply an open-source or creative-commons licensing model to the works created during the event, The Incubator is focused on developing broader models of “sustainable sharing.” The FOSS model prioritises the rights of the user, over the rights of the maker. However, this model creates a burden for the makers that may only be sustainable in an ecosystem comprised of co-creating users who contribute to the initial production, or to improvements that make the project continually better for everyone, and not in a situation where the majority of users are demanding, non-contributing members. Situations of the latter nature have resulted in burn-out and projects being abandoned.

Having initially attempted to attract funding for the continued development of projects under a FOSS model, The Incubator has found that not all social innovation projects have Raymond’s “Necessary Preconditions for the Bazaar Style.” In fact, both government- and private-sector support can be more forthcoming when a project is focused on delivering value and a return on investment, which may preclude a FOSS model (at least initially). Through its ongoing activities The Incubator is facilitating the development of an intertemporal

community, connecting participants of the different forms of hackfest and innovation project with interested users, practitioners, academics, students, private and public agencies, and investors.

As a neutral space, independent of any particular institution, The Incubator enables people to get away from “everything” at their traditional workplace or home, to focus on making “the thing” that their project is committed to developing. Due to The Incubator’s focus on social innovation, it is developing a community of cross-disciplinary expertise to assist makers in developing their projects, and is proactive in connecting makers where synergies may exist between projects in order to create shared value. It is a social bazaar that seeks to enable sustainable sharing, and alongside events like hackathons, functions as a critical intermediary between practices of playful sketching and wider aims of generating proto-publics.

City

Parramatta is a fast-growing urban satellite region 25 kilometres to the west of Sydney’s CBD, itself the centre of the large geographic area of Western Sydney, comprising low-density residential suburbs, industrial and agricultural zones, and natural parks. Long known as a “dormitory suburb,” supplying a workforce to Sydney’s commercial centre, the recent long housing market boom has created a new commercial and creative optimism in Parramatta that has witnessed strong growth in advanced manufacturing businesses, experimental maker start-ups, and community-oriented social enterprises.

As residents and workers in Parramatta, we also experience the city as a literal geography of place-making. A beneficiary of Sydney’s enduring property boom, over the two-year timeframe of our analysis it has witnessed an explosion of new high-rise residential and commercial buildings, much of which serves to accommodate Western Sydney’s growing population. Consistent with contemporary global urban rhetorics of smart city development, space activation, and entrepreneurial

citizenship, the local council has encouraged, in its discourses and policies, start-ups, social enterprises, and civic-oriented events and festivals.

This environment has produced a number of Parramatta-based organisations keen to kick-start or refine their digital and commercial strategies through hackathons such as those run by HACK Western Sydney. However, and despite the presence of several large consulting firms in Parramatta (Deloitte, KPMG, Price Waterhouse), the city has not yet developed the kind of thriving technology sector that so readily populates hackathon events in, for instance, the city of Sydney itself. Like much of Western Sydney (though less so than urban centres farther South East, such as Fairfield and Liverpool) its population is disproportionately made up of recent migrants, who focus on finding accommodation, work, and education.

We suspect these and other factors have led to the Western Sydney hackathons being attended by much smaller numbers of participants, typically 15-20 people, with a range of skills that extend from coding to management, business development, design, and copyediting. While the events have lacked the technology concentration of comparable events in Australia's major urban centres, they also generated a high degree of connectivity between participants in HACK Western Sydney and other related events in Parramatta, including other hackathons, festivals, sustainability networks, and local business, political, and university events. The insularity of technology practitioners, a feature often complained about at other events, has been largely absent as a consequence.

As a wider site for urban making, these positive aspects need to be calibrated against Parramatta's challenges. Compared with Sydney's central suburbs, the small business sector is dominated by personal service industries, such as hospitality, accounting, and hair stylists. Moreover, and despite council policies and investments, urban development overwhelmingly centres upon hard, rather than soft,

infrastructure. From the extension of the major freeway bordering the city's south side, to the array of generic skyscrapers recently completed or under construction, Parramatta appears to us at times to be integrating few of the prescriptions for sustainable development, equitable housing, or tactical urbanism espoused by much recent critical urban scholarship. In the face of seemingly unfettered highly financialized construction, our organisational group wonders: can hackathons and social enterprises function as more than cosmetic adornments, or are they signs of a process of gentrification that do little to remediate its more destructive effects?

As we have discussed with respect to the hackathon events and the social enterprise, such affective despondency is more often countermanded by specific interactions and relations that evolve in the course of their conduct. At the level of experience of the city itself, it has made us more attuned to other cases and places of play and experimentation, and our conversations with others involved in community practice and technology innovation betrays a similar appreciation. Irrespective of the scale and size of impact, our sense is of numerous potentialities forming precisely through similar cooperatives and initiatives.

Discussion: Prototyping through Play

Drawing from the literature review and case-study, our discussion outlines the ephemeral aspects of hackathons, what we term *prototyping through play*. The quick and playful event of sketching images and notes onto a napkin is motivated largely via critical making—participating in the process of collaboration and experimentation to produce a shared, open-source prototype for social change. This knowingly imperfect prototype as a public good is in contrast to the desire to make a perfected product, for simply utilitarian or individualistic ends (such as slick products, competition, or rewards). Hackathons provide a particular time and space where participants can share, explore, and imagine ideas and speculative models for the future. The partial and temporary hackathon process is imbued by “material *participation*” (Lodato and DiSalvo

“Hackathons as Material Production” 539ff) rather than simply production. The coalescing constraints and freedoms which hackathons offer, we suggest, produces a collaborative and liminal space. This liminality unfolds from the “inbetweenness” afforded via *playful places*, *socio-technical intermediaries*, and the making of *protopublics*, each of which are described in further detail below.

Playful places

This aspect illustrates the ways in which the phenomenon of play—simultaneously grounded within and beyond a place, as well as activated via particular rituals and rules—emerged from the hackathon process. Larsen’s focus on place and spatiality provides a nuanced interpretation of the phenomenon of play, describing it as “a spatial dyad consisting of two different layers of spatiality. The first is concerned with actual reality or locality of play, while the other is interested in the spatiality of a mental augmentation” (187). The augmentation afforded through play and place shows the nexus between artefacts and the imagination. But how is this spatial dyad of play activated?

In exploring play as cultural phenomenon, Huizinga highlights the following key features of play: it is voluntary and transitional, characterized by limits of time and space, as well as a “play-community” (12), which creates both order and tensions. Combining Larsen and Huizinga’s insights helps us to highlight the ways in which hackathons attract participants as “playful places,” which are divergent in terms of fostering freedom and exploration, while also converging particular places, times, and rules. These divergent and convergent aspects merge to produce interstitial spaces encouraging participants to play with failure, experimentation, and risk. Rather than emphasising the product, or output, of a hackathon, the notion of playful places points to the ad-hoc, ongoing spatial and temporal tension of hackathons: the present and localized creation of a sample artefact, or prototype, entwined with a future intent. Observing hackathons as always improvising with

available resources and opportunities, Lodato and DiSalvo describe how “ad hoc design” is “characterized by adjustments to the scope and outcome of a prototype *during making*” (6).

The process of this ad-hoc making via play—comprised of the finitude of place and resources, as well as the freedom and fleetingness of augmentation raised above—can have a range of repercussions. Aligned with the ethos of speculative civics mentioned earlier, the term “critical making” (Ratto) helps to draw our focus upon “the act of shared construction itself as an activity and a site for enhancing and extending conceptual understandings of critical sociotechnical issues” (254). The degree to which these hybridized, playful places are oriented toward individualized competitiveness and entrepreneurship, or *critical making* and sustainable sharing, is influenced largely by the socio-technical intermediaries involved.

Socio-technical intermediaries

This aspect illustrates the ways in which we experience the hackathons as enacted through new arrangements of people and platforms. The socio-technical intermediary describes, for example, the organisations, events, and networks that can connect different forms of expertise to inspire engagement not only during the short-term hackathon event, but sometimes with a longer-term view as well. In the context of cities and socio-technical transitions, Hodson and Marvin describe intermediary organisations as new forms of urban governance, “which are set-up to intervene in a variety of ways in existing systems of producing and consuming resources” (482). They highlight how the focus and temporality of these intermediary organisations differ according to focus (project-focused or systemic), and time-scale (months to years), depending on priorities and motivations. In light of advances in digital governance and the role of software technologies, Williamson describes how a new range of “innovation intermediaries” have popped up: “from a loose hybrid of the think tank, the social enterprise and the charitable organisation, merged with aspects of the digital R&D lab (all of which

are themselves contested, elastic and emergent organisational forms)” (299). Technological advances have blurred the boundaries of these urban and digital forms of governance, from which new socio-technical intermediaries arise.

A diverse range of such intermediaries have sprung up as hackathons have become more common. These events have become popular across non-profit, industry, government, and educational organisations. Two trends shaping hackathons, as Lodato and DiSalvo describe, include their increasing purposiveness, “organized around a social topic or context, such as environmental well-being, food systems, or citizenship, rather than being organized around a technical platform” (Lodato and DiSalvo, “Hackathons as Ad-hoc Design Events,” 1) and their professionalization of hackathons, evident from large prizes, corporate sponsorship, and even venture capital offerings. The first trend opens up opportunities for participants from a range of backgrounds and organisations to contribute and “hack” a problem or issue, a shift from the initially software-focused events with primarily programmers attending. The second trend has added financial incentives, awards, and public prestige to participating in the event, adding a markedly different motivational gloss. The points of differentiation across these socio-technical intermediaries is threefold, spanning: their motivations (profit, or non-for-profit); incentives offered (financial prizes, social networks); and maintenance (the degree of infrastructure and support beyond intensive hackathon events). For instance, an open-source, sustainable sharing model means participants have fewer constraints on leveraging what they have done.

These varying tendencies signal how socio-technical intermediaries can organise hackathons with different tendencies and modes of participation: between making and *critical* making. The former gears events more toward individualized competition and rewards, whereas the latter is energized largely by collective critique and care. Next, we outline an aspect which emerges from the socio-technical intermediaries

and playful places outlined above: the generation of publics-in-the-making oriented more toward collective benefits, rather than individualized entrepreneurship.

Protopublics

This third aspect outlines the unfinished objects, or prototypes, which were developed via the hackathon process—as well as the shared learning and communities which emerged. Together, these digital objects (such as apps or websites) and collective expertise (designers, programmers, community members) instigated new possibilities, or publics, to form. While the products and publics are not final, the value is not in any slick finalisation, but rather in the very shared process of formation. The instantiation of these new publics speaks to a liminal, or transitional, state that has been momentarily inscribed and can have both planned and unplanned effects. The term “protopublics” has been used in the context of undergraduate writing classes showing how the sharing and embedding of ideas in writing is always a process of making public, or publishing (Eberly). Eberly describes the process of students “thinking, talking, and writing about and for different publics” as instigating the very process of forming new and “overlapping publics” (172). These written outputs may not be mainstreamed or communicated to large audiences, yet it does not limit the expression and potential for these ideas to inspire and connect both intended and unintended audiences. The notion of protopublics has also been explored in relation to hackathons (Lodato and DiSalvo, “Hackathons as Ad-hoc Design Events,”; “Material Production”); as the authors emphasise, material participation is both key to these events, and often insufficient for the realization of their wider civic goals. “Just as the various artefacts and systems construed through issue-oriented hackathons are suggestive and incomplete of the means needed to address the issues, so too are the publics that are constituted through these events” (554).

It is useful to apply this notion of protopublics to what emerged from the process of hackathons, how the ad-hoc process of participants thinking, talking, and making enables potential publics to form. While these publics may not be fully realized, they offer samples and possibilities, rather than finalized products. As raised earlier, play and intermediaries can have varying motivations, which can inform the types of publics in the making. In accordance with the notion of “speculative civics” (DiSalvo, et al., “Hackathons as Material Production”), the intent is not simply focused upon a product to be realised beyond the prototype stage, but is more about how projects can be “activities and artefacts of design to explore future civic conditions and consequences” (4987).

Hackathons, we propose, offer an in-between space from which playful places and socio-technical intermediaries can foster protopublics.

Conclusion: Continuing the Play-Struggle

The drive of play blurs the boundaries between physical and imagined communities, play and work, amateur and professional, as well as the real and virtual. Hackathons and their varying expectations, incentives, participants, and rewards mutate the event and process in different ways. This means that the process of play is neither arbitrary nor impartial, or as Söderberg explains, “[p]lay is by default organized in communities and these bodies constitute the cells of play struggle” (174). This speaks to the “play struggle” and the interplay between place, socio-technical intermediaries, and publics we highlighted in our findings.

We began this paper by considering the question of what incentivizes people to give up their time to participate in a hackathon and solve a challenge, one that may or may not result in a finished product. The focus on the process, rather than the end product, aligns with a playful drive: the freedom beyond necessity. It is this very playfulness which we need to return to, the messy and collagic aspects of *how* we make, rather than the veneer of neatness and completeness of *what* we make.

Alongside the glowing success stories of familiar and common-place technology—websites, tools, and products such as Google search, the

Amazon shopping portal, or Apple computers—exists a lesser-known or shadow world of ephemeral digital fragments. Neither household names nor widely parodied failures, these are projects begun but left unfinished. Or finished but lacking users. Hosted, but not linked to. At the bottom of page nine of the search engine results for their keywords. Nested within the “long tail” of uncited and unfollowed source code repositories. This is a not-unusual outcome of digital projects and tools created through hackathons, incubators, and even short-term academic projects. The incomplete and temporally fleeting nature of these projects is often problematised, but in this paper we aim to have highlighted some of the more positive aspects of the production of technological ephemera.

Hackathons, social enterprises, innovation and co-working spaces, and living labs belong to a new vocabulary of organisational terms that occasion enthusiasm, scepticism, and increasingly within academic discourse, critique through their championing of techno-solutionism and their sidelining of questions of labour, sustainability, and corporate responsibility. Against these responses, we have argued the analysis of hackathon events over time shows other functional behaviour.

Specifically, the temporal purview of hackathons particularly can operate as organisational and communitarian fillip against the more well-established durations of intra-day (the meeting, the event, the seminar, or even the work shift) or multi-week (the project, the semester) processes.

The merits or otherwise of the duration of hackathons has not been our central focus here. Rather, one of our aims has been to explore the specific relationship of this quite tactical scale of time to other, longer timeframes involved in less tangible but more strategic processes of “platforming,” community building, and the evolving of technological and social ecologies. With respect to the concepts of playful places, socio-technical intermediaries, and protopublics we introduced above, these multiple durations or heterotemporalities make evident what appraisals and critiques of hackathons as stand-alone, solipsistic events cannot.

Considered over time, and in conjunction with the development of a socially-oriented business and a wider urban context, we have identified three key aspects of hackathons that might otherwise escape attention: the establishment of playful places; socio-technical intermediaries; and proto-publics. These aspects resonate with the “inbetweenness” of the hackathon process that informed our sketches of the city. Our impressions highlight the overlapping communities that the hackathon process generates: the immediate community within and beyond Western Sydney involved in the intensive hackathon process (composed of socio-technical intermediaries, such as HACK Western Sydney and The Incubator), as well as the imagined communities, or protopublics, both for and beyond the intended beneficiaries (Parramatta and other geographical and organisational settings). Prototyping through play—and the intermingling drive and struggle—disturbs the false divide between physical and imagined communities, play and work, amateur and professional, as well as the real and the virtual. From a pragmatic perspective, hackathons are an event where volunteers share their knowledge and expertise so as to fix a bug, address an issue, and produce a shared artefact. Rich outputs generated at low cost means that the style of the event is increasingly adapted and co-opted by organisations in varying ways. However, the broader ethos, and that which cannot be captured, is inspired by the play and possible futures generated at such events: always unsettling established notions of place, participation, and publics.

Notes

1. For de-identification purposes, the name of the hackathon network has been fictionalised.
2. To avoid a potential conflict of interest, we have anonymised the name of the incubator to “The Incubator,” as it is run by one of the authors.
3. The “co-founder” is one of us. We have employed the third person voice to avoid saying “one of us” throughout this sub-section.

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