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CIVIC SPACES AND COLLABORATIVE COMMONS

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Commons based peer production (CBPP) is a framework for considering economic production emerging from voluntary relationships and supported at scale by ICTs, and sits in tension with contemporary modes of technology development that are often hierarchical and profit driven. Reflecting on interviews, workshops, and action research, I use concepts from CBPP and other writings on the commons to analyze governance and production in Civic Tech Toronto (CTTO), a six year old group supporting autonomous technology development in Toronto, Canada. I use these concepts to provide clarity on some elements of CTTO's governance and its role in transitions within Toronto's civic tech world. On the one hand, while and operating as a commons allows the community to reproduce itself and support the emergence of projects, in some ways it also appears to frustrate commons based strategies for transition, such as the Partner State Approach. CTTO's focus on producing social relationships also strains some of CBPP's focus on transition through the creation of competitive technologies, while nonetheless demonstrating the value of common spaces for civic life in the city.

Keywords: civic spaces, commons

Complement: Report on Workshops and Engagement [pdf]

1. INTRODUCTION

Nearly every Tuesday night since July 2015, whether in government buildings, universities, technology firms, community spaces, or Zoom meetings, Civic Tech Toronto [1] has hosted a hacknight. After participants have satisfied their appetites for pizza or samosas, introductions begin. Going around the room, participants introduce themselves. They are designers, public servants, students, researchers, activists, grocery store clerks, retirees, newcomers, and "anarchists with a soft spot for government". Civic Tech Toronto (CTTO) is, in their own words, a "diverse community of Torontonians" who have built a community based on an interest "in better understanding and finding solutions to civic challenges through technology" (CTTO, 2020). They are interested in transit, elections, democracy, mesh networking, housing, policing, web design and more. They are looking to learn, to teach, to make friends, to find jobs, and meaningful projects. After everyone has introduced themselves, they listen to the nights' speaker, asking questions and exhorting the presenter to stay a little longer. Then come announcements and pitches. One by one, members come up and explain what they are working on: a problem, an application, a map, a device, and what they need help with: front end, back end, writing, social media, GIS, or just some perspective. Then, they mill about in groups, talking, working in empty board rooms overlooking the city, hacking and working together. At 9, the chairs are stacked and they are all shepherded outside into the night, often going in groups to a nearby bar where they stay up later than makes sense for a Tuesday, talking and planning for the following week.

The goal of this paper is to characterize CTTO as a civic space made through commoning and self-governance (Bollier, 2014), and as a site of commons based peer production (CBPP) (Benkler, 2006; Bauwens, 2019, Dafermos, 2020). The intention is threefold: I argue that framing CTTO in the language of commons helps make sense of its

mode of governance and productive activities, and that after such an application we can examine the potential for CTTO as a site of commons transition, and as a point of reflection on the limits of this model. To do this, I first describe the salient elements of civic technology and CBPP (reserving criticism of CBPP for later sections), before exploring how those aspects are applicable, or not, to CTTO. This analysis is used to corroborate and challenge key aspects of the theory, providing clarity to some of CTTO's more ambiguous aspects, while putting empirical pressure on CBPP, especially as it relates to political and economic transition.

This paper is based on two years of fieldwork (including document analysis, interviews, participant observation, and workshops) examining how public interest technology was produced in Toronto, and specifically how Civic Tech Toronto, my primary research site, was entangled in this work. I also participated in organizing and planning activities, including organizing hacknights, attending organizing meetings, organizing special events and presentations for and on behalf of the group. From September 2019 to 2021 I have attended hacknights and organized meetings as an organizer participant, and I have regularly attended hacknights since 2015.

2. BACKGROUND

2.1 Civic Technology and Practice

Owing in part to the distributed nature of "civic tech" communities, there are many ways to demarcate the term and practice of civic tech. In a formative blog post, Christopher Whitaker defines civic tech as "technology projects involving intentional collaboration between technologists, bureaucrats, entrepreneurs and nonprofit employees to engage the public or solve civic problems… [or] Any technology that intersects public life" (Whitaker, 2015). This definition ascribes distinguishing characteristics of Civic Tech; a) that it creates a specific kind of technology, b) that it does so through a specific development process that can be contrasted with other modes of technological development.

Some definitions of civic tech generally focus on technologies deployed by governments (Saldivar et al, 2019). Used in this manner, terms like "civic tech" and "public interest technology" (Schneier, 2019) have much in common with terms like eGovernment and digital government (networked information systems use to access government services) and eParticipation (technologies to support interactions with democratic political processes) (Macintosh, 2008; Medaglia 2012).

Even the term "civic tech" itself admits of serious ambivalence. Laurenellen McCann, interviewing dozens of practitioners, notes that many did not see themselves as doing "Civic Tech," and were wary that such a term might risk erasing the long histories of localized struggle for justice, because observers could become fixated on how organizers were using contemporary technologies (McCann, 2015). A focus on technologies, or even the political positioning of technologies, marginalizes the collective labour and productive structures that have always been at the core of civic tech groups, which are often made up of volunteers who commit to projects and to each other not only to produce different kinds of technologies, but to produce them in different ways.

Whitaker's definition also positions civic technology as an innovation in technology development to involve more diverse sets of actors, such as "technologists, bureaucrats, entrepreneurs and nonprofit employees," (Whitaker 2015) each offering complementary technical and situational expertise. The idea that more effective and equitable systems and interventions can be designed by leveraging numerous perspectives is hardly new. It has been core to design, STS and some systems thinking approaches for decades. Engaging in iterative and participatory design is, however, a new idea for governments, and civic tech as a term can signify a way of developing technologies without relying on major vendors and top-down software engineering

(Noveck, 2015).

Recognizing that civic technologies are often produced in response to local situations, Husain et al. (2018) describe what they call "place-based civic tech" that is "co-created and co-owned" by its users, and ostensibly produced for a wider commons. For them, place-based civic tech is potentially emancipatory insofar as it musters hybrid online and offline collaboration under an open-source ethos to create the conditions for self-governance and coalition building to intervene in local politics. Technologies help to coordinate these polities, so that they can be effectively governed as common spaces (Husain, 2018). As a reformist project, civic tech imagines a technologically retrofitted democracy, where state services are easy to use, and where state of the art data collection techniques make the world legible to states and citizens alike (Schrock, 2018). These technologies are also applied to democratic governance, suggesting a polity that can engage with online consultations, where public servants and citizens come together to understand complex social situations or just to talk shop.

2.2 Theories of Transition: Commons and Commons Based Peer Production

Contemporary economies are dominated by markets and states, the "public" and "private" sectors where most people earn their livelihood (Bollier, 2014). In many cases, these are hierarchical organizations, where resources and labour are allocated in service of goals set by owners or elected officials, without seeking input of subordinate members. Commons, by contrast, are governed by commoners, who exercise decision making control over the use and protection of the commons without a coercive command structure (Ostrom 1990; Standing 2019). This does not mean commons are governed without structure, but rather that the labour required to reproduce the community and protect the commons emerges from the community itself. This is the role of stewards, commoners who perform the administrative and reproductive labour that sustains the commons (Standing, 2019). Commons are always social arrangements that produce and reproduce relationships among commoners, in addition to producing material outcomes. Hardt and Negri refer to this as "social production," where the value of labour comes in the form of new relationships (or even in the software-led stabilization of relationships) rather than in the production of material goods *per se*. When production occurs between autonomous peers, the value produced is inseparable from the relations that produce it (Hardt, 2017).

Of course, commons are not a recent invention, and forms of communal stewardship were practised for centuries in, for example, European and Indigenous American societies (Federici, 2018, Fortier, 2017). The term "commons" signifies a wide range of practices that are usually highly localized in their configuration; they are purpose built to culture, geography, etc. (Ostrom, 1990). Recently, however, the prolific production of open source software by voluntary contributors has catalyzed a wave of research interest in technologies produced for the commons, and posited that commons evince a new and potentially transformative model for production and governance, Commons Based Peer Production (CBPP) (Benkler, 2006).

2.3 CBPP and its Ecosystem

CBPP is a "prototype" for a mode of production, with software development as a key focus, that proponents argue can gradually transcend the hierarchical forms of private property that dominate economies around the world, if it is not subordinated to these interests. This transition can be interpreted dialectically, as both a negation (an "erosion" and "taming") of capital's dominance, and as a negation of a negation, by reprising communal relations of reciprocity at a "higher level of complexity", supported by technological infrastructures that can secure livelihoods through CBPP at scale (Bauwens, 2019). As a theory of transition, CBPP is advanced when CBPP production becomes more competitive than proprietary software and private firms, and as

legal and political conditions are changed to encourage and support this kind of production (Dafermos, 2020).

CBPP's success is secured within an "ecosystem consisting of three institutions: the productive community; the commons-oriented entrepreneurial coalition(s); and the for-benefit association." (Bauwens, 2019; p. 15). These institutions give access to contributing peers, while entities such as cooperatives organize contributions into products and provide livelihoods. For-benefit associations act as mediators between commons and state institutions, by helping to set standards, popularizing open licenses, and interacting with policymaking processes to secure favourable conditions for CBPP and give it legitimacy as an alternative productive model. These institutions are imagined to cooperate with each other, pooling resources and collaborating to promote their shared goals (Dafermos, 2020).

Bauwens et al. imagine CBPP to be an inclusive mode of production, writing that "CBPP is in principle open to anyone with the skills to contribute to a joint project… CBPP allows contributions based on all kinds of motivations, but most importantly on the desire to create something mutually useful to those contributing" (Bauwens 2019, p.11). However, in practice, this inclusivity may be harder to realize. For example, some kinds of less- or non-technical work can be marginalized, despite its importance to maintaining not only the technologies under production, but also the productive communities themselves (Dunbar-Hester, 2020). Dunbar-Hester argues convincingly that without grappling seriously with a politics on inclusion, technology producing groups will reflect, rather than transcend, existing structures of exclusion, perpetuating marginalization based on things like race, gender, and technical role (Dunbar-Hester, 2020).

Crucially, the economic transition to CBPP is not viewed as a process extraneous to the state, but rather as an approach to governance that requires constructive cooperation between commoners and their states. The "Partner State Approach" (PSA) sees the state as the key site of intervention and gives it a role in creating the legislative conditions for an egalitarian mode of production, not primarily through the abolition of capital, but by supporting commoners and encouraging CBPP (Bauwens et al, 2015, 2019; Dafermos, 2020). This transition starts from the bottom, where "citizen-commoners and their social movements would drive the existing state form into partner state forms" (Bauwens, 2019). Partner states provide legal recognition and protection to commons, ensuring their autonomy and ability to govern themselves based on informal social norms (Bollier, 2014).

3. CIVIC TECH TORONTO (CTTO) AND THE COMMONS

In this section, I explore how groups in Toronto use technology for civic action, before applying concepts from CBPP to CTTO, focusing specifically on governance and production.

3.1 Civics and Tech in Toronto

In 2019 and 2020 I attended numerous events (both in-person and virtual) , conducted interviews, and examined documentation for many local groups and projects. My intention was to explore the different people and groups that were working at the intersection of technology and civic life or who are self-consciously using technological expertise to intervene in matters of shared concern. As I quickly found, there were a great number of these groups. In part, this was because the porous boundaries of "civic tech" were readily exceeded. This research helped reveal a history of communities in Toronto organizing around technologies or technology discourse. CTTO is in some ways unique, but it is not alone, and so below I provide a brief overview of some of the other groups in Toronto leveraging technology development for social and economic change.

Projects like Alternative Toronto [2] and Mapping Black Futures Toronto [3] have created maps and

community archives to document the histories of Toronto's Alternative and Black communities, serving specific publics whose spaces are threatened by Toronto's gentrification. Indigenous Friends (now a social enterprise) has created a social network to build connections and community among Indigenous youth in the city of Toronto [4], IntersecTO hosts meetups and creates podcasts reflecting on the experiences of Black, Indigenous and tech workers of colour [5], and the Digital Justice Lab, a Makeway Shared Platform Project, exists to advocate for marginalized communities and help non-profits build digital capacities [6].

Publics (groups organized around specific issues) also play a role in the city's technology discourse. #BlockSidewalk, an umbrella for different groups and individuals, emerged to restrain the ambitions of the now cancelled Alphabet smart city on Toronto's waterfront [7]. Tech Reset Canada provides critical advice on Canada's technology and innovation policy [8], while groups like EDGI (the Environmental Data Governance Initiative) rose to the task of guerrilla archiving when a change in administration threatened climate data from the United States [9]. HousingNowTO uses data visualization to monitor the city's affordability and housing crisis [10], while groups like the Davenport Mutual Aid Network [11] have emerged from Caremongering groups on Facebook to support those suffering hardships amid the COVID-19 pandemic.

Toronto also has vibrant P2P and hacker communities, with maker-spaces and artist run centres hosting projects and offering events to the public. A FreeGeek chapter refurbishes donated computers to offer as low cost Linux machines [12]. Especially interesting are the publics that have organized around internet infrastructure, with Wireless Nomad [13] operating as a cooperative ISP until 2009, and Toronto Free-Net continuing to operate as a not for profit ISP [14]. Until 2011, Wireless Toronto, organized by a CTTO co-founder, mobilized a community of volunteers to establish and maintain a network of public WiFi hotspots in the city by partnering with local businesses and public spaces [15]. Now, Toronto Mesh, founded at CTTO in 2016, works to develop and deploy community run wireless infrastructure in the city [16]. The Our Networks conference runs yearly, bringing together P2P and decentralized/community infrastructure advocates from across the world, and championing visions of alternative networking technologies [17].

Each of these groups and projects has their own stories. Many of them do not use terms like "civic tech" to describe their work, but many have also had interactions with CTTO (whether as speakers or through member crossover) and all of them are legible as projects that address Toronto through the novel application of technologies leveraging connection and cooperation. CTTO's position is harder to pinpoint, but it nonetheless contributes quite a lot to this arena, which I examine below through analysis of its governance structure and modes of production.

3.2 Civic Tech Toronto

CTTO creates and maintains a place for interaction within a specific modality of political subjectivity through weekly events. Started in the summer of 2015 by a group of technologists, activists, consultants and public servants, CTTO's community is constructed around "hacknights", weekly congregations that bring together participants of many different professional backgrounds, encouraging them to interact and make things together. After a free meal and a presentation, attendees are invited to make short "pitches" that describe their areas of interest, perhaps by initiating a "project" or by stating their goals for the night. The latter half of the hacknight is devoted to working in these breakout groups, where participants discuss, research and hack on their ideas and interventions. In some moments overtly sceptical of the brief engagements of the "hackathon" format, hacknights stress iterative and intentional involvement in topics, even if the outcome is a collective sense of awe at the

complexity of civic issues.

Thinking about CTTO as commons focuses attention on reciprocal relationships and shared resources, as well as the processes by which they are governed. Below, I use this framing to make sense of features of the group that can appear to participants as persistent oddities in its structure, and to drive a deeper probing of scholarly understandings of commons.

Following the advice of fellows in Chicago, CTTO committed to creating a persistent and dynamic presence meeting once per week. Persistence was seen as essential to building a functional and credible community, while the magnitude of this task is offset by a governance structure that is resilient, scalable, and consensual. CTTO is distinct from other groups organizing civic technology production in its embrace of casual and fluid participation. Several CTTO organizers who attended a 2019 Code for America Summit remarked upon how "burnout" was much more prevalent in the more hierarchical Code for America brigades, who had struggled with transitions in leadership. Civic tech "brigades" in the United States are organized under the Code for America foundation, each with a set of captains that direct the operation of the brigade. CTTO lacks this kind of governance structure, and is also unlike other non-profits in Canada; there is no mandate, no elected officers, and no board of directors. Instead, members of the community are invited to attend monthly "co-organizer meetings" (there are no prerequisites). As stewards, co-organizers perform the reproductive labour of the community by volunteering to fill"roles", taking responsibility for finding speakers and venues, ordering food, emceeing hacknights, etc. These roles are filled in one or six month terms, setting out the work but allowing organizers in roles to operate autonomously.

This governance structure is purposefully minimalistic, and trades off the ability to make strategic or political decisions on behalf of the group for resilience:

> We encouraged people to take on responsibility, but we chunked responsibility into small enough pieces that it wasn't daunting to take any of those on, [. . .] both [. . .] in terms of the scale of the responsibility, and also in terms of the length of time that you're committing [. . .] My vision of it is that we've set it up in such a way that there aren't really a lot of heavy decisions to be made. There's also not a lot of money that needs to change hands. Both of those things are things that are very challenging for volunteer organizations to do, and so if we can find ways to minimize the needs for money and for decisions, it reduces the amount of conflict and tension [..] but if there's a decision to be made, and the organization is incapable of making it, that's a huge problem.
>
> *GS*

This means that the capacities of CTTO are highly dependent on the availability and capabilities of volunteers. When it comes to reproducing the community, it is generally effective. The only "missed" hacknight in nearly six years was due to a venue pullout during a snowstorm. In cases where key roles are unfilled, others can provide support by taking over roles for a night, and their continual willingness to do so reflects the great sense of care and commitment that many past and present organizers feel toward the community. Participants are also encouraged to take up roles, which ensures that this knowledge is relatively distributed throughout the community.

Of course, hierarchies still exist at CTTO. Sometimes these hierarchies are based on perception of capability, there are many varieties of experts who participate. In decision-making, informal influence can be tied to longevity, where historical and cultural knowledge is viewed with some deference, even though this contrasts with the voluntarism encouraged by members. In part, this could be because cultural transmission is so central to the reproduction of the community; without a specific

purpose or mandate, participants must learn about the values, norms and vision of CTTO from others. The informality of CTTO's norms and processes, while they are documented, can be jarring for some. For example, one interviewee, Skaidra, was surprised at the fact that the group has no official connection to the City of Toronto or any other organization, and that projects are not sponsored and operate with complete autonomy.

> I [. . .] was so confused, like how are these volunteers just coming here, and yet hacking away at all these different projects[?. . .] I just didn't get it, honestly. I just felt like I needed to [. . .] find the key links in the community, but I think what I really learned is [that] everyone is a link in this community, and its not always perfect, but ultimately you are kind of encouraged to pitch your idea, and see what sticks. [It's] a [. . .] different model for me to wrap my head around[. . .]
>
> *SKP*

Project work also encourages participants to experiment with different modes of cooperation. Since there is no obligation to return to hacknights, projects must continually attract new members whose commitment is consensual, and where duties are negotiated within the groups. This can be empowering and limiting, as groups work to scope interventions, keep their commitments, publicize their work, and bring in new members when needed. Projects begin, end, or grow to the point where they work outside of hacknights in part or entirely. Managing this ambiguity is part of the culture, and part of the work. Alex J, a longtime participant and organizer, put it thusly:

> I feel that [CTTO] is a fluid enough space that the people that sort of turn up haven't initially been filtered. They might find themselves filtering or interacting in different ways so that different groups of people end up carrying projects forward. . . when people come together and begin a project it's not really done necessarily from the get-go by having everybody on board at the same time. Different people enter at different stages of the process. They all leave and enter with different understandings, but through that process, like the idea is like, you fully anticipate chaos. You are working with chaos and that's kind of the point, whereas [. . .] there is always more of a drive for up front organization, I think, in a lot of different settings.
>
> *AJ*

This way of working with ambiguity and relying on reciprocity exemplifies a commons mindset, and relies on social norms and informal processes. For CTTO to persist over time, it must always be onboarding new members, retaining inter- est, and soliciting more volunteer co-organizers. To do this, CTTO hacknights need not only be interesting (event pages always spotlight the speaker of the night), but inclusive. CTTO has a number of customs to facilitate this. When meeting in person, a free meal is provided. Everyone introduces themselves, even if this takes a long time. Participants are reminded weekly that technical skill is not in-itself a basis for authority stressing that "anyone can contribute", and that interest or experience is sufficient to make a contribution to a project. Interdisciplinary exploration is lauded as "silo-busting", and a Code of Conduct prohibits harassment of any kind. First timers are asked to identify themselves in introductions and are invited to attend an onboarding session, Civic Tech 101, which is run every week. Much of the slideshow content is primarily descriptive, but it is common for veterans to attend, to engage with and welcome new participants, and maybe providing some additional clarity: even if first time entrants don't quite understand the amorphous structure and purpose of CTTO when they leave, they should certainly know that they are welcome back any time.

Even though CTTO does not identify itself as a commons, it's existence is only possible because of

the mutual commitments to each other, and to the group, that participants hold in common. In a city like Toronto, where many participants only experience work in hierarchical organizations, and only experience politics in transactional elections, creating this capacity for self-governance is absolutely necessary for future commoning. The work of maintaining the hacknights is a common endeavour, and in doing so produces new subjectivities, new commoners (Poderi, 2018; Caffentzis and Federici, 2018). Speaking with Bianca Wylie, a CTTO founder and prominent technology critic on the topic, she said the following:

> I don't think we have a well defined sense of how we're supposed to govern ourselves together, what our roles are between elections. What are our political responsibilities to each other, you know, between elections, outside of representative democracy. . . And so I think where the commons and Civic Tech come together is. . . in the organizing work, the relationships over-time, iterating on how to organize together, how do we share responsibility, how do we steward a space, how do we steward projects, how do we help each other? I think it's a really important productive learning place for models that have more to do with self-governance.
>
> *BW*

This helps to demonstrate the essential link between commons and community; commons exceed the resources and processes that they manage, because they rely on, and create relationships among commoners. By supporting each other, CTTO participants set the stage for productive activity. While broadly speaking, the consensual and supportive governance structure of CTTO is congruent with CBPP, it also demonstrates some interesting adaptations to its environment, although each can be interpreted as a trade-off of goods. To handle fluidity, CTTO focuses on producing conditions for participants to autonomously pursue their interests, but it can be hard for participants to become comfortable with the ambiguous structure of hacknights. To stay flexible, CTTO distributes skills and work widely across its membership, but making structural improvements to the model more difficult. To remain inclusive, CTTO generally stays focused on day to day operations, but this apolitical stance makes it difficult to turn shared values into action. Among organizers and participants, positions on topics like the Sidewalk Labs Quayside project or the 2020 Black Lives Matter protests were generally congruent. But these important shared commitments are hard to translate into a collective voice or political action.

3.3 Production at CTTO: Community as Resource, Commons as Platform

CTTO's endurance as a common civic space has two main productive outcomes: projects and publics. These two are not mutually exclusive; people come together at CTTO to address shared matters of care (Poderi, 2018) Sometimes this results in projects that persist at hacknights, sometimes exceeding them altogether. Of course, this is not all that results from the hacknights: people learn new things, make new friends, get jobs, etc.

Describing itself as an "umbrella of connections and resources," CTTO acknowledges the centrality of relationship building to its productive activity by creating a time and space for self directed work and learning, where participants engage with each other in cooperative activities, sharing skills and developing ideas in projects. Participants often attend with a mind to developing skills, and are afforded opportunities to practice in a low pressure environment on projects, and in cooperation with peers who may have already developed these skills. The casual nature of collaboration at CTTO has been noted as particularly important by participants, as it allows them to explore interests without the stress of a hierarchical workplace where the stakes of "failure" to deliver are higher. There are scores of projects that have emerged from CTTO, and many more that have simply served as sites for discussion

and experimentation with participants.

> The big Ah-ha! for me was that actually it's about learning, that the way that CTTO is going to have impact is by bringing people together to learn together about whatever it is that they want to learn. I think most powerful for me, civics, also how to talk to people who are different from you, how to learn from people who are different from you, as well as technology and design and all of the other stuff. . . that that was a much more convincing and realistic way that we were going to have impact. . . The connection that an app can have to positive social impact is very tentative, it's very difficult to connect those dots. Also, we weren't seeing the work that was happening on Tuesdays turn quickly into apps. [. . .] For a long while, we thought like "Oh, it's all about the projects, and we just need to get as many projects happening as possible", and to support the development and [. . .] release of those projects. And then it turned into something quite different, which is. . . How do we enable learning?
>
> *GS*

CTTO produces publics by connecting people through pitches, enlisting them based on interest or skill, and supporting the development of shared work objects. For example, an overlapping pool of contributors have created at least four projects to address issues around housing and homelessness. "Chalmers Cards" were designed at CTTO and leverage local makerspaces to laser-cut durable wooden booklets that contain important information on how to access essential services. Much more durable than paper, these cards are intended to be circulated within communities. "Chalmers Signal" is a device enabling shelters to update their capacity using a rotary dial, which updates an online map, improving the availability of capacity information in the city's already crowded shelters. Although Chalmers Signal has not been taken up by the city's shelter system, Chalmers Bot, designed by Ample Labs, a nonprofit who got their start at CTTO, achieved both sponsoring partners and municipal clients for a chatbot designed to provide information on available services based on plain language queries in multiple languages. Toronto Tech Mentoring, which still meets regularly at CTTO, has begun partnering with transitional housing programs in the city to offer mentorship and tech training to at-risk youth, to provide opportunities for education and personal growth. This constellation of projects emerged from CTTO over several years of collaboration, and continues to enlist new volunteers.

CTTO Hacknights also act as a "contact zone" for different social worlds (Thoutenhoofd and Ratto, 2007), where a diversity of interests and skills provide opportunities for organizations, as well as individuals. For example, non-for- profits and civil servants can present their work-in-progress and receive feedback or even long-term engagement from experienced practitioners, as was the case with a secure messaging service with the The Ontario Coalition of Rape Crisis Centres (Aghadee, 2020), or Bikespace [18], an app developed through a Code for Canada mediated partnership between CTTO and the City of Toronto. Multiple co-organizers that I spoke to pointed out how one of the major impacts of CTTO was consciousness building, that participants "leave with another idea, leave with something they hadn't considered before" (SKP) or provide an "opportunity to interact with people that are not talking about things that maybe [people] closer into their circles talk about all the time" (AJ).

The contact that CTTO has facilitated between public servants and civilians is particularly interesting in terms of commoning transitions. In 2017, hundreds gathered at a CTTO hacknight #109 to celebrate the creation of the Ontario Digital Service (ODS), which secured a commitment by the public service to building in-house technology capacity that would allow for "rapid prototyping, Agile development, user research and service design" (Abdulla, 2016) and marked the hiring of the

province's first Chief Digital Officer, Hilary Hartley, who championed the usefulness of human centred design and Agile development for government (CTTO, 2017). This was an important moment for CTTO, as it gave legitimacy to their view that governments must transform the way they develop technology to be more responsive to civic needs. Among some of the first ODS employees were CTTO members, and crossover between CTTO and the ODS continues to this day, and serves as an important connection between public servants and community experts. For public servants, being able to interact with publics provides some legitimacy and feedback for their work. Skaidra, who has done a lot of co-organizing with CTTO while working as a public servant, had this to say:

> In some ways that is the beauty of it, that it kind of validates the work we're doing. Just personally, when we talk amongst ourselves in our business channels in the ODS, we will constantly share things that CTTO is doing being like "Oh, isn't that great? They actually used our open data set, or they actually forked some ideas that we made publically available to create this other project." [. . .] CTTO plays a huge role in keeping discussions alive, [. . .] just keeping people interested in this area, which is so important and so hard to make real for a lot of people. Like, people can't just show up to government,[. . .] CTTO allows discussions to flow in a different space. Sometimes it's a safer space for certain individuals, sometimes it's a space where people feel [. . .] more comfortable. [T]he social aspect of it, [. . .] the informal aspect of it [. . .] it's key.
>
> *SKP*

This momentum was not limited to the government. In 2017 CTTO founders and organizers also founded Code for Canada (C4C) [19], in partnership with the government of Ontario. C4C is a not-for-profit that has since worked with public servants to build technological capacity in government, through a fellowship program, a "civic hall" that offers membership-based training for public servants, and a usability testing service, GRIT [20]. This was another legitimization of the CTTO community, recognizing the value of collaborating with smaller firms focused specifically on applying tech and design expertise to government. The creation of C4C and the ODS were a significant achievement of CTTO's goals.

As a space that is neither public nor private, both online and offline, CTTO is an excellent example of "placed-based civic tech". It galvanizes Toronto's civil society, experiments with technology outside of market incentives, and provides a crucial contact-zone for residents and public servants. The productive activities of CTTO also exemplify CBPP: they are based on voluntary association, supported by a community administered digital infrastructure, and set the stage for cooperative and supportive relationships where technologies are developed based on shared values and a desire for meaningful contribution. To complete this framing, we must explore how CTTO can be productively situated in a normative vision of transition toward societies and economies based on CBPP. That, however, requires an articulation of CTTO's proximity to contemporary transitions in governance that set the stage for the relations that could support systemic CBPP.

4. REFLECTIONS AND THE LIMITS OF CBPP

Commons are a model for governance that stand opposed to the hierarchical organizations of firms and states, organizing commoners in consensual modes of production. For its proponents, CBPP and the PSA provide a roadmap for transition, where commons based arrangements becomes a competitive and widespread alternative to wage labour. Now that we have some understanding of groups like CTTO as a commons, how do they speak back to those theories of transition?

4.1 From Movement To Sector: Transitions in the Social World of Civic Tech

Even imagining a commons transition in Toronto is difficult, given the way that technology and profit are so closely linked. Speaking at a tech industry event in the winter of 2020, where founders and would-be entrepreneurs gathered to celebrate their achievements by "taking over city hall," Toronto Mayor John Tory was succinct in his connection between Toronto's prosperity and the technology industry. Speaking to his embrace of companies like Uber, Tory's strategy was to "send a signal to the world that we were embracing innovation, rather than turning it away," by traveling around the world to convince technology start-ups and companies to base themselves in Toronto, and leveraging universities to supply workers for these firms. Looking for "true partners", his goals were to secure their shared "value-set" and a "top quality of life," while also nodding to the erosion of institutions such as transit and the continually worsening housing and affordability crises, catalysed in part by a decades long influx of capital (TechTO, 2020).

CTTO's influence on government was obvious in 2017, but any gains from this are hard to observe to this day. In some ways, the founding of C4C and the ODS mark a transition in Toronto's civic tech community, and even a fragmentation of the social world. On the one hand, there is a civic tech community focused on creating an inclusive space for laypeople, technologists and expertise to intermix, share expertise and perspectives, and collaborate on projects. On the other hand, civic tech was also emerging as a "sector" of economic production, with new firms focused on interfacing with the organization of government, providing products, services, expertise and training. This transition is readily evident in the United States, where prominent civic tech institutions like the New York Civic Hall write reports addressed to the "civic tech sector" (Nucera et al., 2019). In contrast to civic tech as-a-movement, civic tech as-a-sector is led by 'experts'. Commitments to open and participatory design notwithstanding, it does not seek to mobilize laypeople to express their political agency through technological experimentation or discussion (with notable exceptions, such as C4C's user testing service GRIT, which enlists a diverse range of users to provide data in technology development). It is not radically municipalist in the sense of "place-based civic tech" (Husain et al., 2018).

CTTO shows congruities with CBPP. The co-organizers and project leads fill the role of the entrepreneurial coalition, organizing contributions from the productive community of participants, and setting the stage for CBPP through their reproductive labour at hacknights. CTTO relies on entrepreneurial activity for all of its functions, from co-organizing to projects. CTTO projects generate value through collaboration, rather than extracting it from labour. While there is no rule that CTTO projects cannot be for-profit, projects that grow to the point of independence from CTTO generally share many of the values of the commons, and if they become entities at all, often become not-for-profit firms. This has been the case with projects like Ample Labs [21] and Law and Design CoLab [22], while Toronto Mesh has remained an unincorporated collective, and BikeSpace now exists primarily as an open source repository.

Articulating a for-benefit association for CTTO is a normative exercise that requires speculation not only on the overall purpose of CTTO, but also on the tactics and interventions best suited to fulfilling that purpose. Organizations like Open North perform some of these functions in Canada, operating at the level of standards in civic tech domains like open data, smart cities and AI ethics [23]. But Open North does not make any claims to being a guarantor or steward of the civic tech community or movement in Toronto or nationwide. That role is claimed by the organization Code for Canada (C4C). Part of the C4C mandate is the maintenance of the "Civic Tech Community Network," (CTCN) intended to support and proliferate grassroots civic tech chapters such as CTTO. This is accomplished through the provision of resources for starting new chapters, showcasing

past and present civic tech projects and hosting quarterly organizing calls. Outside of the CTCN, C4C has achieved great success through their fellowship program that places tech expertise into government departments for short-term interventions and training programs for public servants. C4C can achieve these kinds of productive partnerships because of access to resources like full-time staff in outreach and partnerships and relationships with public servants, some of which are a direct result of the networks created through communities like CTTO. But the relationship between C4C and CTTO is still informal; there is plenty of membership crossover, and C4C has been generous with in-kind support, such as securing temporary hosting for technology deployments, but there are no ongoing commitments to providing support for CTTO or any other civic tech group in Canada, and C4C does not lobby on behalf of these groups.

The legitimization of civic technology as an economically valuable activity is significant, but so too is the loss of focus on the emancipatory claims of the early civic tech movement. The values animating these two civic techs remain similar, even if their approach differs. Though sectoral civic tech is perhaps more effective in generating technological transactions and contracts, the focus on cooperation and education has been partitioned from the parts of civic tech that are seen as legitimate technological endeavours, i.e. providing technical services and support to the State.

4.2 Producing Commons versus "Productive" Commons

CTTO's productive activities are not easily understandable in terms of CBPP. CBPP advocates for a commons transition through the production of competitive technologies, organized using principles of the commons. CTTO produces technologies, yes, but indirectly through their support of a space for collaboration amongst peers. More important is that CTTO produces community, in terms of the relationships amongst peers and between social worlds. This is more in-line with the idea of "social production," offered by Hardt and Negri (2017), which asks social movements and labour unions to organize horizontally into "social unions" that support solidarity and even large scale actions. The concept of alliances is also central to CBPP, though proponents like Bauwens and Kostakis look for cooperation with entrepreneurs whose profits are entangled with the commons. CTTO has allies in civic tech groups across the continent, in all levels of government, and in firms across the city. But turning these relationships into partnerships with tangible productive outcomes is hard, because CTTO is not a legal entity.

The governance structure that enables CTTO to be flexible, consensual, and self-governing, is also a major constraint to becoming perceived as a legitimate actor. As one longtime contributor to CTTO remarked, it is difficult for individuals to speak on behalf of such a decentralized community. There is no common voice. In general, CTTO lacks the capacity and standing to be legible as a potential partner or as an effective lobbying agent, in part because its decentralized and non-hierarchical structure makes it hard to act with any unifying agency. Even adopting an underlying vision or politics at CTTO, embracing the commons, so to speak, is a major challenge; these concepts are not prevalent among members, whose fluid participation makes it questionable if these commitments would endure transition. Ironically, it is hard to imagine a way for CTTO to officially embrace the commons without adopting a more hierarchical form!

By contrast, other civic tech groups like Code for DC (Code for DC, 2020) and Civic Tech Fredericton (Civic Tech Toronto, 2021) have a history of productive partnerships with state and nonstate actors, in part because members contribute work hours and professional finesse to make these partnerships happen. Perhaps in some cases, an intermediary is needed, as when C4C acted to secure a paid project manager for CTTO's Bikespace project, which filled a need in Toronto and contributed to the commons, the code being forked by the city of Edmonton as well. Recently, however,

the fate of the project has become less certain, as there is a question of who will pay hosting costs for the application, which currently rests with C4C. For CTTO, an organization whose lack of cashflow is a feature rather than a bug, providing this kind of support is a major obstacle. Many projects have to become traditional nonprofits to seek funding support, but this means they must change their governance structures to operate much more like firms.

4.3 The Partner State Approach (PSA)

CTTO's situation also helps to demonstrate some of the tensions of the Partner State Approach (PSA). As discussed above, there are many informal collaborations between CTTO and government, almost always involving junior public servants who are familiar with CTTO. As Dafermos notes, a "post-hegemonic" PSA would focus on the subversion of governmentality "through democratization of citizen participation in the managerial process of state-controlled commons" (Dafermos, 2020, p.64). Some of the relationships between CTTO and government actually do prefigure this kind of transformation, in moments where public servants and communities contribute complementary expertise to interventions and design processes, in a venue where they are both accountable and actively seeking engagement. These relationships help to make the public service more porous, and if the involvement of civilians in politicized commons becomes widespread and mutually beneficial, more partnerships could be viable.

Of course, this is easier theorized than executed. There are major frustrations to realizing this kind of partnership, not the least of which mean overcoming the pervasive neoliberal rationalities of state institutions, but also overcoming the legal and organizational constraints to make the kinds of partnerships sought by the PSA even conceivable. There are essentially no incentives to adopt collaborative policy making techniques that are messier, more expensive and demanding, and without the neat, reportable results that serve as political currency.

Finally, there is an important strategic obstacle to embracing the PSA. As Dafermos notes, PSA is a "hegemonic" strategy, insofar as it suggests that infiltrating or otherwise recalibrating state power is necessary to secure commons. Dafermos is wise to the fact that seeking engagement with the state is at odds with the decentralized and non-hierarchical politics of many radical technology groups and social movements (Dafermos, 2020). This criticism is even more poignant in settler colonial states like Canada, where both progressive political movements and commoning practices can marginalize Indigenous struggles for sovereignty and justice if they are not reconciled to a decolonial politics (Fortier, 2017). For the settler activists that Fortier interviewed, this has meant understanding "relationality from an Indigenous perspective,. . . transition[ing] from logics of control to logics of interdependence. . . [and developing] a practice of accountability by learning how to be responsible to relationships with the territories they share with Indigenous nations" (Fortier, 2017 p. 81).

Any theoretical or practical conciliation between Indigenous and settler potentialities is well beyond the scope of this work, and can only be explored in actual practices of reciprocity and support that must accompany the nurturing of commons and commoners. Such a transformation may be possible (Asch et al. 2018; Estes 2019). But for the PSA, which is predicated on alliances and mutual aid, to be even notionally viable, its proponents must address the deep distrust that many Indigenous and Black champions have toward the state, earned after centuries of colonial violence, neglect, and dispossession. This may well mean giving way to an even more radical understanding of the role that commons can play in societal transformation, but at least insofar as we locate our politics in interdependence, and seeking right relations, we may yet find common ground.

5. FORMS FOR THE FUTURE

In March 2020, immediately following Open Data week and the Code for Canada yearly summit, the COVID-19 pandemic drastically changed social realities around the world. For CTTO, this was no different. Repurposing assets and making quick decisions, CTTO went fully virtual over the course of a week. Hacknights continue to bring in speakers and offer a space for projects. But there will be no return to normal. When we begin to leave our houses and to congregate again, the true damage of COVID-19 will become visible in new ways.

Long periods of lockdown and quarantine have changed the way we relate to each other in public and groups, demanding communities re-imagine themselves according to the affordances of video calling and streaming platforms. The pandemic has magnified social inequalities and accelerated the erosion of our common well-being, forcing many workers into isolation and precarity. The changes have also been felt at CTTO, where virtual calls can feel like another work meeting, making the intellectual and social labour of civic technology less fun, and more abstract.

While CBPP explains the motivation of voluntary contributors in terms of pleasure or desire (Bauwens, 2019; Benkler, 2006; Dafermos, 2020), there seems to be a lot more going on at CTTO. The pandemic has shown the importance of the reproductive labour of commoning, including the social and emotional support we offer to one another as friends and peers that make hacknights such a vibrant and inclusive space (Teixeira, 2020). The exchanges and relations among members during the hardships of 2020 are not simply self-serving, they are acts of generosity, of duty, of care. These are the affects of commoners (Poderi, 2018), and our connections to these shared experiments are more than mere transactions. Still, the community has sought to experiment with new forms of productive and affirming relationships. CTTO has remained remarkably resilient. With the continued work of co-organizers, it will survive as long as hacknights bring in new members and make new relationships.

CTTO is merely one node, one potential commons, in a cooperative network that begins to collapse political subjectivity with economic activity and social reproduction. Since its inception, reflexive members of the community have realized that as a community of experts in policy and technology, civic tech was bound to fall short of its ideals of widespread cooperation and solidarity (Tauberer, 2016). This may be partially true of civic tech as a sector, but it is not necessarily true of civic tech as a movement based on affinity, encouragement and cooperation. Maintaining spaces where political performance and civic education can be performed is always necessary to support civil societies, and creating and maintaining commons is necessary to create commoners.

Seeing CTTO as a commons, as a space for CBPP, is a momentary attempt to secure the ideals of the community up to this point, and to offer visions for the future. If we are not finished with the futures that CTTO imagines, if we still believe that creating a diverse and inclusive space at the intersection of democracy and technology is a worthwhile project, then we must work to protect the spaces where these futures are performed. This could mean finding ways to negotiate with CTTO participants past and present, to create a strategy for commoning CTTO that is principled and pragmatic. It will require the support of allies inside and outside of government, of civic tech as a sector and as a movement. And it will require that we act as allies as well.

Above all, we must continually be searching for new ways of realizing the power of our communities, by supporting and amplifying champions in struggles for social justice, such as the movement for Black Lives, mutual aid networks supporting people displaced and living in encampments in Toronto like the Encampment Support Network [24], gig worker union drives like Foodsters United against exploitative technological systems [25], and by

living up to our treaty obligations to the Indigenous peoples of the Great Lakes Region.

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END NOTES

[1] Civic Tech Toronto – https://civictech.ca

[2] Alternative Toronto – https://www.alternativetoronto.ca

[3] Black Futures Now – https://mbf.blackfuturesnow.to/

[4] Indigenous Friends – https://indigenousfriends.org

[5] IntersectTO – https://intersectto.gitbook.io/community/

[6] Digital Justice Lab – https://digitaljusticelab.ca/

[7] #BlockSidewalk – https://www.blocksidewalk.ca/

[8] Tech Reset Canada – https://www.techresetcanada.org/

[9] EDGI – https://envirodatagov.org/

[10] HousingNowTO – https://createto.ca/housingnow/

[11] Davenport Mutual Aid Network – https://davenportmutualaid.ca/

[12] FreeGeek – https://www.freegeektoronto.org/

[13] Wireless Nomad – https://en.wikipedia.org/wiki/Wireless_Nomad

[14] Freenet Toronto – http://www.torfree.net/

[15] Wireless Toronto – http://wirelesstoronto.ca/

[16] Toronto Mesh – https://tomesh.net/

[17] Our Networks – https://ournetworks.ca/

[18] Bikespace – https://www.bikespace.ca/

[19] Code for Canada – https://codefor.ca/

[20] GRIT Toronto – https://www.gritto.ca/

[21] Ample Labs – https://www.amplelabs.co/

[22] Law and Design CoLab – https://lawdesigncolab.ca/

[23] Open North – https://opennorth.ca/

[24] Encampment Support Network – https://www.encampmentsupportnetwork.com/

[25] Foodsters United – https://www.foodstersunited.ca/

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