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Cooperative Futures: Technologies of the Common in the Collaborative Economy

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The creation of ambient media architectures brings machinic multiplicities into existence whose autonomy cannot be folded back easily into a politics of representation. In and of itself, this is nothing new - the autonomy of pollution particles or radiation waves has challenged attempts to regulate the consequences of their actions for a long time, giving rise to multiple bodies of thought, policy, and strategy in political ecology, systems design, and complexity governance. The interest in new forms of cooperation is driven largely by similar concerns, searching for ways of collaboration that allow a much higher degree of individual and collective self-determination to pursue shared concerns. Current debates on cooperativism take seriously the role of peer-to-peer logics in the shift from shared use to shared ownership, the power of computational infrastructures to scale local efforts beyond the boundaries of micropolitical solutions, and the need to affirm broader genealogies of the technological condition. Cooperativism research outlines a large horizon for action and analysis, exploring economic, social, and political strategies for an economy of shared ownership and collective self-organization. These social technologies of the common design the scene for cooperation.

Technologies of the Common

The question of the commons has been at the center of many reflections on economic, social, and cultural change. With a focus on sharing and the practices of commoning that create and sustain cultures of cooperation, accounts of collaborative economies have foregrounded the dynamics of enclosures and the practices of resistance to attempts to constrain shared use (6)(30)(31). In the context of data-driven platform economy business models and the "algorithmic governmentalities" governing their operations, these histories and traditions of co-ownership offer rich opportunities to reimagine, reframe and reorganize the way we live and work (41)(49). As contemporary peer-to-peer cultures experiment to redesign the cultural techniques of cooperation and collaboration, it seems all the more important to broaden the horizon of such experiments, beyond "sharing" as a technologically-driven practice and toward a much broader account of human-nonhuman sociality.[1]

Since "if 'commoning' has any meaning, it must be the production of ourselves as a common subject", there is a need to explore the role these dynamics of cooperation can play in shaping who we are and become, above and beyond the creation of fair economies (15). Framing these dynamics as "technologies of the common", this essay aims to contribute to such reflection. I started using the term "technologies of the common" a few years ago and have explored its analytical reach in different contexts (54)(55)(56)(57). While use of the term "technologies" seems to run counter to the need to challenge technological determinisms and technology-driven paradigms of cultural, economic, and social change, I think it is important to consider that the

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[1] Speaking of which (i.e. human sociality), the question of what it means (in an experience economy organized around attention rather than the visible) to hear, to heed, as a way to listen "to the language of things" (Walter Benjamin / Hito Steyerl) rather than to obey the injunctions to individuate (the resonances of a reading of Louis Althusser's account of interpellation as key dynamic of becoming-subject, the turning of a subject upon the calling of his/her name) runs through this essay as a sub-plot. Minor, but since the question continues to present itself as I write one might as well acknowledge such a presence.

horizon of contemporary thought is indeed something like a "technological condition" whose implications we are just beginning to unfold (24). And whereas much reflection on commoning and the commons aims to counter the emphasis on technological innovation with an affirmation of the autonomy of social and other forms of non-technical innovation, I am convinced that it is on the terrain of the technological - of its infrastructural dynamics as well as the material conditions of possibility that structure its effects - that the scope of this autonomy will be determined. The stakes are high, and whether research is driven by the analysis of machinic socialities in "subjective economies" or curious explorations of emerging "cognitive assemblages" that cut across human/non-human distinctions, it seems that we will have to think with and perhaps even from within the machine (22)(29).

The current debates on cooperativism take seriously the role of peer-to-peer logics in the shift from shared use to shared ownership, the power of computational infrastructures to scale local efforts beyond the boundaries of micropolitical solutions, and the need to affirm broader genealogies of the technological condition - beyond the "digital" in the narrow sense of post-WWII computational technology development or policy visions of the "digital society", both of which often end up reaffirming that our collective future is created in the former "Valley of Heart's Delight" on the US West Coast (32). As important, intriguing, and instructive as the interventions created in this influential, initially mainly publicly-funded research hub are, it makes little sense to accept these mythologies of innovation as new master narrative or policy template. A focus on cooperation brings a much wider and indeed transcultural archive of strategies into view, both of commons-based resource governance and the cosmopolitical visions informing them.[2]

Ours to Hack and Own

Across a series of events and publications, the ideas of a "platform cooperativism" and an "open cooperativism" have been developed to combine the dynamics of peer production with the cultural, economic and social concerns of cooperativism. Current cooperativism research outlines a large horizon for action and analysis, exploring economic, social, and political strategies for an economy of shared ownership and collective self-organization (4)(46). The ethos of cooperativism shapes not only the organization of collaborative research and development, but the design of technical systems to address the growing interest in transparent and trusted data-driven digital economy models. Integrating open technologies and the concerns of open societies, cooperativism exemplifies the dynamics of open and social innovation in the collaborative economy and combines technological and non-technological innovation in unique ways. Across this literature of research and practice, I find the following themes particularly relevant in facilitating reflection on technologies of the common:

Histories of Non-Technical Innovation: If we think of innovation in technological terms, the historical horizon of our current moment is mainly defined by the horizon of technological innovation. Histories of Silicon Valley show that the combination of massive post-war public investment in research infrastructures and the cultural legacies of a "hippie modernism" does not provide a template that can easily be reproduced simply by bringing venture capital together with start-up incubators and accelerators (8). Cooperativism offers organizational alternatives to the corporation and reframe the all-too-brief histories of the digital society, beyond innovation

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2 The late Stuart Hall spoke of the "will to connect", a phrase that for me beautifully captures the excitement of explicit commitments to cooperation, but also directly link them to questions of power (as in a "will to power", growth, or greater intensity) such commitments imply. Maybe this is, at bottom, a Spinozist view of the world, but most importantly here is that the archive of such modes of cooperation must comprise more than another collection of toolkits for social change and include such "wills to connect". Otherwise, even a well-meaning cooperativism will find it difficult to open up the analytical and political horizon of cooperative social technologies and cultural techniques. I use the term "cosmopolitical" in the sense of Isabelle Stenger's "cosmopolitical proposal", see below.

ecosystems clustered around the oligopolies of the platform economy, but also beyond accounts that feature mainly male engineering heroes.[3] This is crucial. While the rediscovery of historical practices of experimentation and sharing in the name of "social innovation" is welcome, the consequences of digital transformation require more than another wave of innovations to repair whatever collateral damage technological determinism might cause. Cooperativism shifts the focus of debate from the fascination with expert-driven "innovation" toward the broader cultural contestation of how we actually organize life and work in a future of shared experience.

Members not Markets: Cooperativism is not a communism-to-come but the pragmatism of coupling traditions and technologies in new assemblages. Many innovations are simply useful rather than disruptive and therefore "make better communities than commodities" (43). In such cases, the logic of venture capital pushing start-ups towards buyouts and IPOs makes less sense than cooperative ownership models designed to meet the needs of members rather than stock markets.[4] At the same time, it makes more sense to speak of "member markets" rather than "members not markets" - not all markets are the same, and to limit the horizon of cooperativisms to "non-market" economies might mean many a missed opportunity for the creation of larger-scale alternatives.[5]

Use as Work: Behind this pragmatism lies an analysis of the so-called "sharing economy" that approaches use as a form of work (34)(45). In the data-driven business models of the platform economy, users generate the data, the interfaces of free services operate as devices of capture, and comprehensive analytics apparatuses trace user movements across the web as well as the site in question.[6] Because cooperatives have roots in worker-driven forms of labor organization, the logic of cooperatives can bring hackers and workers together.[7] These participation-as-free-labor analyses are part of a broader set of concerns regarding the rules of the attention economy. If users want to use ad blockers to modify their experience of use to screen out the crass commercialism of online ads, for example, companies contend that users are undermining their business model and weaken print-to-online transition strategies. What they don't say is that they want to collect the data without telling users what they do with it (36)(39)(44). While we are lightyears away from data transparency, new forms of activism are already reclaiming the terrain of the attention economy - from algorithmic accountability journalism to concerted efforts to blacklist (and thereby defund) online sites.[8] How users can get involved in the negotiation of the trade-offs of the benefits of cloud-based data-driven approaches (customization,

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[3] Online reviewers of a recent history of the "digital universe" (13), for example, largely focus on the relationship between John von Neumann and ENIAC pioneers-turned-household-names J. Presper Eckert and John W. Mauchly. Rarely mentioned is that "Kay McNulty, Betty Jennings, Betty Snyder, Marlyn Meltzer, Fran Bilas, and Ruth Lichterman were the original programmers of the first American electronic computer, and they have traditionally been little more than a footnote in the history of the ENIAC"; see (19). Also see (5)(20)(23)(26)(47).

[4] See http://platformcoop.net/resources/directory for a directory of platform cooperatives.

[5] Blockchain-driven cooperatives like the streaming platform resonate.is watch the shift from IPOs to ICOs (Initial Coin Offerings) closely and expect major changes in the way (cooperative) platform projects will be financed.

[6] The ability to trace users across the web prompted a key shift in Facebook's relationship to online advertising (28), also see (33).

[7] In his analysis of "vectoralism", McKenzie Wark writes: "What the vectoralist firm owns and controls is brands, patents copyrights, and trademarks, or it controls the networks, clouds, and infrastructures, along which such information might move. The rise of the so-called sharing economy is really just a logical extension of this contracting out of actual material services and labor by firms that control unequal flows of information. ... The significance of platform cooperativism is that it is a movement that can place itself at the nexus of the interests and experiences of both workers and hackers. Why not use the specific skills hackers have to create the means of organizing information, but use it to create quite other ways of organizing labor? Cooperatives have a long history in the labor movement; indeed, in their origins, they looked back to forms of peasant self-organization of the commons" (53).

efficiency, etc.) and act on their growing awareness of the risks of such automated data collection by companies and state agencies is highly relevant to cooperative "systems design" strategies focusing on co-owned, federated infrastructures.

Urban Commons. While commons are often associated with the shared ownership and use of natural resources, the question of commoning in urban environments has been taken up by a diverse group of actors interested in "the city as a commons" (17). Many economic activities across the collaborative economy are decentralized, but the processes of social innovation are often rooted in the dynamics of urban life and closely linked to urban governance strategies. Cities can do much to facilitate these forms of innovation, and municipal actors in 'rebel' cities like Barcelona are demonstrating the potential of commons-based and peer-to-peer approaches in the design of comprehensive urban governance strategies (2)(18)(21)(42). The sharing of such models across city networks is a form of political organization that tends to attract less attention than the activities of states or supranational organizations. But since cities offer rich opportunities to make alternative futures tangible, cooperativism has set its sights on a networked municipalism that allows ordinary people to become active across borders.

New Alliances. Easier said than done, the experiences of DIY and maker efforts suggest that it is through hands-on experimentation and collaborative prototyping that such broadening of debates occurs. Here, new alliances might be on the horizon - SMEs unsure about how to approach and invest in the large number of technologies loosely grouped in "industry 4.0" or "industrial internet" policy frameworks welcome greater opportunities to explore these technologies before they invest. And their approach to the dynamics of the platform economy might have more in common with (un)civil society organizations than large corporate players.[9]

Another Europe. While radical municipalism has a long history in the US, the new meso-politics - neither individual nor national but a politics of and across the in-between-structures - of cross-city cooperation is of particular relevance to Europe. While it is hard to believe that we still have to make the case for cross-border cooperation, in the face of a well-coordinated resurgence of cultural and economic nationalisms it is important to document that another Europe already exists. Much of this other Europe revolves around the collaborative economy.[10] Cooperatives are currently at the heart of a key innovation debate around the platform economies that have become the signature infrastructures of a new generation of services in the collaborative economy.[11] Following the 2012 UN Year of Cooperatives, the 2013 establishment of the EU Working Group on Cooperatives, and the 2016 Bratislava Declaration, cooperatives have been widely recognized as a practice of cultural, economic and social collaboration that is also a core dynamic of non-technological innovation.[12] The cooperative economy ethos is much older than the digital economy, yet analyses of current innovation models frequently fail to take the wide spectrum of

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8 See https://www.facebook.com/slpnggiants for a campaign to defund breitbart.com.

9 In Europe, SME-focused "digital innovation hubs" (https://ec.europa.eu/digital-single-market/en/digital-innovation-hubs) exist alongside grassroots-driven "digital social innovation" sites (http://digitalsocial.eu)

10 https://ec.europa.eu/growth/single-market/services/collaborative-economy_en

11 The legal statute of a European Cooperative Society (https://ec.europa.eu/growth/sectors/social-economy/cooperatives/european-cooperative-society_en, https://coopseurope.coop/policy-topic/regulatory-framework-cooperatives) provides the idea of a Europe from below with a figure of law. Also see (11).

12 As of 2015, cooperatives reached "a total annual turnover of 1,005 billion Euros - more than the GDP of Finland, Denmark, Norway and Sweden combined" (12)(14).

historical models into account. This is where a new agenda of cooperativism research can make key contributions.[13]

Social Technologies. The traditions of small-scale "common-pool resource management" practices (Elinor Ostrom) have already featured prominently in collaborative economies.[14] Such approaches are currently being complemented by the transfer of the logic of blockchains, the distributed ledger system powering virtual currencies, to other forms of organization (16). What makes the new generation of cooperative ventures so interesting is that they address the question of scale (4)(40). Based on fundamental assumptions about how trust works and can be encoded, blockchains are already expected to be involved in a wide range of applications (51). As with all technological innovations, there is nothing "inherently emancipatory" about the blockchain (10). The question is, again as always, how design and use are framed, how we balance the exercise of individual and social rights? Will blockchain-based cooperatives thrive only in gentrified neighborhoods blessed with broadband access and generous technological literacy resources? If we get involved in technology design debates over "What kinds of subjectivity do we want to algorithmically inscribe into our systems?,", these debates need to involve a much wider array of people from beyond the confines of coder cultures (35)(9).

Cooperative Machinisms. It seems that just as we are about to transfer the logics of peer-to-peer communication across the fields of cultural, economic, and social activity, the internet itself is changing: "the telecoms industry has evolved from a public peer-to-peer service - where people had the right to access telecommunications - to a pack of content delivery networks where the rules are written by a handful of content owners, ignoring any concept of national sovereignty" (25). What is more, this shift occurs in the context of efforts to "democratize" artificial intelligence without a corresponding democratization of the (oligopolistic) infrastructures framing such engagement.[15] So while it is exciting to follow the invitation to "democratize" cloud-based AI systems, there is no need to lose sight of the broader question of who owns the information spaces within which we are expected to conduct our affairs.[16] In the context of cooperativism, these trends - engaging with infrastructural changes and the potential of machine learning - are already coming together.[17] Above and beyond individual acts of sharing or strategies of resource management, cooperation can be understood as a cultural technique with a long cross-cultural history. As we engage in the algorithmicization of our core cultural techniques, this affects cooperation as well. A better understanding of how we share, of what sharing is, not just of how we engage in acts of sharing across solidarity economies, but of who we become as we organize

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[13] In 2016, Germany's tradition of cooperatives was added to UNESCO's Intangible Cultural Heritage list.

[14] In smaller-scale collaborations, the gains of cooperation outweigh the benefits of (narrowly) self-interested action. See (38). Research by Ostrom and her colleagues has been taken up widely across alternative, solidarity economy efforts and continues to serve as shared point of reference. See, for example, (7).

[15] See, for example, Google's Chief Scientist of Google Cloud and Machine Learning Fei Fei Li on the "democratization" of AI in her keynote for Google Cloud Next 2017, https://www.youtube.com/watch?v=Rgqgdddl018; http://ai-4-all.org/; or Elemental Cognition (https://www.elementalcognition.com), founded by former IBM Watson-engineer David Ferruci.

[16] Less obvious perhaps than questions of internet governance, cooperatives are also involved in the design of co-owned energy systems to offer alternatives to top-down infrastructuralism approaches. See Cooperatives Europe, RESCoop.Eu, Enercoop, The Co-operative Energy, SomEnergia, ICLEI, Climate Alliance, Friends of the Earth Europe and Client Earth, "Joint Reaction to the Energy Union Package of the EU Commission of 25/03/2015", (25.03.2015), https://coopseurope.coop/sites/default/files/Reaction%20to%20Energy%20Union%20Package%20Communication%5B1%5D.pdf. For "a snapshot of the European attempt to turn infrastructural connectivity into a new form of collectivity", see (37). See the European Federation of Renewable Energy Cooperatives (https://rescoop.eu/), also see https://www.indigoadvisorygroup.com/blockchain for a collection of blockchain-based use cases across the industry.

[17] See the collaboration tool http://pol.is that incorporates machine learning to scale democratic deliberations, already used in Taiwan's "vTaiwan" collaborative policy development project. On vTaiwan, see (3)(48)

ourselves as shared selves across the infrastructures of distribution (social media, data-driven economies of work).

Designing a Cosmopolitics of the Common

The creation of ambient media architectures brings machinic multiplicities into existence whose autonomy cannot be folded back easily into a politics of representation. In and of itself, this is nothing new - the autonomy of pollution particles or radiation waves has challenged attempts to regulate the consequences of their actions for a long time, giving rise to multiple bodies of thought, policy, and strategy in political ecology, systems design, and complexity governance. The interest in new forms of cooperation is driven largely by similar concerns, searching for ways of collaboration that allow a much higher degree of individual and collective self-determination to pursue shared concerns. Because such sharing involves - literally, folds into a space of shared experience - human and non-human actors, it calls for(th) a cosmopolitics of the common rather than the politics of representation we already know how to organize. "The fundamental problem we have is that technologies are only as good as their makers. There is mounting evidence that machine-learning algorithms, like all previous technologies, bear the imprint of their designers and culture. … Making the politics of algorithms visible, explicit and accountable may turn out to be even more difficult than calling, say, lawyers to account. … The point of these scenario-building exercises is precisely to authorize the participation of a broad range of relevant actors typically excluded from processes of deliberation about the future" (52).

The cosmopolitical opens up an analytical horizon beyond that of "smart" citizenship and of human voices articulating already-defined interests. In Isabelle Stenger's vision, "the proposal is open to misunderstanding, liable to the Kantian temptation of inferring that politics should aim at allowing a 'cosmos', a 'good common world' to exist – while the idea is precisely to slow down the construction of this common world, to create a space for hesitation regarding what it means to say 'good'" (50). Whatever views of the good society motivate the new wave of cooperativisms, the concern of a cosmopolitics of the common is not to adjudicate the differences of the worlds imagined. Quite the contrary: "The cosmopolitical proposal is incapable of giving a 'good' definition of the procedures that allow us to achieve the 'good' definition of a 'good' common world" (50). To heed the cosmopolitical proposal is "a matter of imbuing political voices with the feeling that they do not master the situation they discuss, that the political arena is peopled with shadows of that which does not have, cannot have or does not want to have a political voice … inventing the way in which 'politics', our signature, could proceed, construct its legitimate reasons, 'in the presence of' that which remains deaf to this legitimacy: that is the cosmopolitical proposal".[18] The common in such a cosmopolitics is not the transcendent universal ground of a politics of rights in which autonomous subjects create institutions to govern their affairs, but refers to the actuality of material interdependencies that cut across culture and nature, subjects and objects, selves and others.

A cosmopolitics of the common is a matter of design: "How to design the political scene in a way that actively protects it from the fiction that 'humans of good will decide in the name of the general interest'? … But also how to design it in such a way that collective thinking has to proceed 'in the presence of' those who would otherwise be likely to be disqualified as having idiotically nothing to propose, hindering the emergent 'common account'? Designing a scene is an art of staging" (50). So how do we design the scene for cooperation? The debate has already begun, quickly gathering

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18 This also offers a way to attend to the call to create "cultures of failure" that is so central to innovation strategies (fail often, fail early, fail cheaply) by hearing it differently, as "the building up of an active memory of the way solutions that we might have considered promising turn out to be failures, deformations or perversions" (50).

into archives to facilitate sharing. Opportunities to reflect on the design of the socio-technological worlds that shape life and labor do not simply arise. They have to be created. To join does not require much, so let us get involved on a broad scale.

It certainly does not require expertise, not even a commitment to any kind of politics. Stenger's invitation to "laugh not at theories but at the authority associated with them" offers a point of departure that is literally always already shared - as is the nature of laughter as a social gesture, and as is the nature of the common (1). To laugh at the presumptuousness of (largely humorless) theories of the digital society, for example, is a possible first step towards a practice of commoning, which begins not with new social technologies or the pragmatism of political solutions but with denying master narratives whatever authority is attributed to them and allows them to operate as a symbolic fictions lending coherence, legitimacy, and power to our worlds (58).[19]

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[19] One could continue this, of course - constituted power is tragic, constituting power is comic etc. And if the humour and irony at the heart of human "resilience" (a popular meme in "smart" societies visions that comprehend resilience mainly as a feature of systems rather than a register of sociality) can ridicule the short-sightedness of technological determinisms, the acknowledgment that to think is to resist (Hannah Arendt, Gilles Deleuze) is only a small step away.

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