Power and Resistance in Digital Degrowth

Raul Nieves, Joan Soler-Adillon, Enric Mor

Universitat Oberta de Catalunya (UOC) Barcelona, Spain
dbsus4@uoc.edu, jsoleradillon@uoc.edu, emor@uoc.edu

Abstract

Degrowth is increasingly gaining attention as an alternative model to the unfolding eco-social crisis generated by industrial capitalism, though questions concerning digital technologies have yet to be addressed in degrowth research. Among the movement of the (digital) commons, whose practices complement degrowth theory, one of the research areas is the viability of such systems to release spaces from capitalism. As (digital) commons spaces frequently revert to capitalist logic, we introduce the "technological dramas" model to encompass the reciprocal and recursive technological production of political power by agonistic entities. We suggest that such a techno-political perspective could contribute to better frame degrowth-related HCI research.

Keywords

HCI, design, critical, political-economy, degrowth, commons, reification, false consciousness, co-optation, technological dramas.

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Post-growth

Planetary chances to restore a sustainable scenario are quickly running low. The UN questions whether we have already passed the turning point.[1] The unsustainable resource throughput promoted by the industrial model is (eventually if not yet) incompatible with the materially limited planetary boundaries.[2] Over the last decades, scholars and practitioners have started to question perpetual growth, a pivotal paradigm in industrial capitalism. Resource depletion, claims Turiel, precludes the default problem-solving conveyed through technological innovation, development, and deployment.[3]

The Degrowth project entwines a set of proposals to prioritize democratic, social and ecological justice in pursuit of well-being over economic growth.[4] Such an economic, political, and social program conflicts with the capitalist political economy: sustainable growth, for degrowth advocates, is an oxymoron.[5] Degrowth provides a political-economy frame to rethink human-computer interaction (HCI) theoretical tenets and practices as key elements to reconfigure the relationship between digital technological activity and eco-social effects.

Political-economy in HCI

The research field of HCI brings together technological and human-related disciplines to improve the interplay between users and machines.[6] Despite HCI's, deeply entrenched, industrial root logic, examining and questioning this very logic, especially recently, has connected many authors in HCI sub-communities.[7] Among them: reflexive HCI[8], humanistic HCI[9], or critical HCI[10]. Dourish examines the early Sustainable HCI research production to expose the risks of naturalizing capitalist assumptions and suggests instead broadening the theoretical approaches in use. The author advocates "dismantle design as an anti-politics machine."[11] Hence, Ekbia and Nardi urge to incorporate political economy in the analysis of HCI's design and practices.[12]

Problematic capitalist core mechanisms, especially productivism and consumerism, take specific forms in HCI- related practices. Ekbia and Nardi quote Marx "production creates the consumer" relating consumerism to the paradoxical production of the "user."[12] This "designed user" is central to the anthropocentric formulation of problems. Problems, again paradoxically, are produced to fit feasible technological solutions, feeding the mechanism known as techno-solutionism.[13] This back-feeding entanglement is key for the industrial production system. It underpins perpetual growth while consuming resources and expelling negative externalities, producing new problems.

These analyses within HCI resonate with the degrowth discourse. Despite some proposals (i.e., see [14] as post-anthropocentrism, or [15] as post-techno-solutionism) we suggest it's necessary to conduct research on how to consistently translate this critique into impact-aware HCI practice. Thus, we turn towards degrowth-aligned practices to foreground strategic political economy issues arising from the struggle to transition outside capitalism.

Challenges in (digital) commoning practices

According to Helfrich and Bollier degrowth and the commons movement are complementary to each other.[16] The commons don't rely on economic growth and make compatible environmental and social justice. These authors define the commons in terms of politics and economics as "*a vast array of self-provisioning and governance systems that flourish mainly outside of both the market and the State.*"

While degrowth frames the subject of critique, the commons exhibit social, political, and economic forms of actualization based on the social practices of commoning: the stewardship practices that a community employs to manage shared things (virtually anything) in common.

Digitally enabled communities of practice, spawned by the emergence of the internet, have long been at the center of commons research. Peer-to-peer (P2P) networking architectures fostered a productive model labeled as commons-based peer production by Benkler.[17] According to P2P advocate Bauwens, this model represents a generative alternative in front of the extractivist modes of capitalist production.[18] Fuster defines the digital commons as online communities which share non-exclusive co-created digital resources.[16]

One of the main research concerns in the commons is the relationship between the state, capitalism, and alternative spaces of resistance. The cartography of such borders seeks to discern the strategic practices to release and gain back spaces from capitalist control.

The commons aim at releasing spaces from capitalism and confronting the enclosing of old and new commons. Such spaces risk falling back to capitalist logic, a process referred to as co-optation. While also discussed as "colonization by capital"[19], "assimilation"[20], "incorporation"[21], "transvestment"[22], or "unwanted corporate appropriation"[23], among other terms, co-optation is ubiquitous in the commons theory but it is scarcely being examined in depth.

Among the few commons theory authors that specifically examine co-optation, we find De Angelis, Caffentzis, and Federici. According to De Angelis, capitalism is about to face a social and ecological crisis and will likely have to leverage or promote the commons to help manage the devastation. [24] De Angelis claims: "*struggles [...] can be absorbed and become part of the system (co-opted), thus renewing it and sustaining it.*" As the logic of the market becomes counterproductive even from the viewpoint of capital accumulation, precluding the cooperation necessary for an efficient system of production, Caffentzis and Federici point to "the danger that 'commons' may be co-opted to provide low-cost forms of reproduction."[25]

Kostakis et al. review and discuss recent criticisms of peer production, classifying some of them as co-optation. The study examines whether digital peer production could be emancipatory or instead become part of capitalism. On one hand, the injection of funds in free open-source software (FOSS) projects and the multi-million-dollar purchases of FOSS companies increase the risks of appropriation of the commons by corporate interests. On the other hand, commons' pro bono production is monetized and exploited by market agents for profit extraction.[26]

To inquire into the origins of digital co-optation, we focus here on the ideas of Osseewaarde et al.[27] The authors analyze how digital commoners recurrently transition through alternative spaces, as they eventually get co-opted. Commoning's essence opposes the technological rationality of formalization, standardization, and quantification, yet the emergence of such spaces relies on technological innovation which is fostered by the growth-oriented efficiency ethos promoted by neo-liberalism. This contradiction, the authors argue, results in a perpetuating illusion, a form of false consciousness, which is rooted in cynicism.

Ossewarde et al. claim that current standard technologies "*are highly opaque because they are often implicit and part of a formalized design for digital interaction that is in itself an arrangement of 'false consciousness'.*"[27] Hence, digital commoning (the generation of contents, but especially of infrastructures) fails to resist co-optation, supporting capitalist expansion as De Angelis, Cafentzis, and Federici denote.

While Ekbia et al. point to reification (the assumption of systemic concepts that are actually socially constructed as inescapable and natural, like the capitalist market) as a hindrance to emancipatory HCI[28], Dourish and Ossewaarde et al. refer to the studies on the reified construction of false consciousness by Lukacs. Ossewaarde et al. argue that such cynicism cannot be overcome via ideology critique, but through technology critique when it "is translated into post-capitalist acts of resistance to the dominating technology design." De Angelis asks "*Isn't this co-evolution between struggle and capital development really inherently with no end?*"[29]

Introducing a technological power construction model in HCI

Reified notions embed the HCI practices with false consciousness, rendering alternatives prone to get co-opted by capitalism. To further comprehend this dynamic, we suggest introducing "technological dramas," a framework by the anthropologist of technology Bryan Pfaffenberger.[30] As technological activity presents an opportunity to embed political values, Pfaffenberger examines how power and resistance are constructed through the reciprocal and recursive shaping of artifacts and values in the design process, which later spread in society.

Pfaffenberger stresses the relevance of myth, ritual, and context in the understanding of the political dimensions of technological activity. Myths are deployed to suspend skepticism, rituals are associated with controlled environments produced to pattern human actions, and social contexts are fabricated in parallel. In this model, technological activity is analyzed as a process of technological communication: "*a technological drama is a discourse of technological statements and counter-statements.*"

The model describes three processes that can occur linearly, or under different permutations, in the construction of politics by technological means:

● **Regularization** occurs when a design entity (usually part of the establishment) *"creates, appropriates, or modifies a technological production process, artifact, user activity, or system in such a way that some of its technical features embody a political aim".*

● **Adjustment** takes shape when impact entities engage in control and alteration strategies. These strategies attempt to counter the discursively regulated social contexts that regularization creates, pursuing to counter their effects. This process can lead to technological appropriation

● **Reconstitution** materializes when impact entities "*try to reverse the implications of a technology through a symbolic inversion process,*" labeled as antisignification by Pfaffenberger. This process can produce, as in some forms of adjustment, appropriation. It can also result in the fabrication of counterartifacts, "*which embody features believed to negate or reverse the political implications of the dominant system.*"

Pfaffenberger employs the term **reintegration** to refer to co-optation processes: "*the response made by the agents of regularization to the new, problematic counterartifacts. Its goal is to gain control over these artifacts by bringing them back into the controlled and ordered space of regularization.*" According to the author, some forms of adjustment and reconstitution stages (resistance processes with relevant degrees of technical intervention) are prone to co-optation. While co-optation has been previously discussed, it is considered by this model in a wide and complex techno-political dynamic.

Besides the three above-mentioned processes, Pfaffenberguer introduces a fourth: **designification** takes place when the link between technological activity and social meaning-producing discourse dims. "*The artifacts, their contexts, and our social behaviors remain; they become taken for granted, routine, and part of the natural attitude of everyday life.*" According to Pfaffenberger, this is the stage where technological activity achieves the greatest social penetration. We suggest a connection between designification and the previously discussed process of reification, here particularly referred to in techno-political, rather than political economy, terms.

Conclusions

In front of collapse, the political and economic project of degrowth offers an alternative coexistence formula. The HCI community is already approaching the degrowth frame in order to redefine its tenets and practices, and political economy analysis has already been adopted by HCI authors to examine reified notions. To expand HCI research we have examined digital commoning challenges to release spaces from capitalist logic. Reification, pointed out already by HCI authors, false consciousness, and co-optation processes are discussed by commons' authors as strategic issues concerning the transition to post-growth alternative political economies.

We suggest the relevance of this model in analyzing and prospecting the construction of political power, in its different stages, in order to deploy strategic practices of transition in front of a ravaging capitalism. Especially due to the systemic view this model offers to dissect and relate processes like designification, co-optation, and possibly others, as stages of the permanent struggle through technological activity. We also suggest leveraging this model as a tool to complement speculative, adversarial, fictional, strategic, or transitional design techniques.[31–35] Hence, we expect this contribution to help HCI researchers better frame degrowth-related practices and research contributions.

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