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BOOK SERIES

COMPUTING AND THE COMMON

LEARNING FROM PARTICIPATORY DESIGN IN THE AGE OF PLATFORM CAPITALISM

Book n. 4

Maurizio Teli, Linda Tonolli, Angela Di Fiore, Vincenzo D'Andrea

UNIVERSITÀ DEGLI STUDI DI TRENTO

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PREFACE TO THE COMMONFARE BOOK SERIES

The Commonfare Book Series (CBS) was launched in January 2018 to provide a forum for discussion on alternative and more equitable forms of welfare provision in contemporary Europe. This discussion is timely and necessary due to the convergence of a number of political, economic and social factors which, in the last couple of decades, have affected Europe. In particular, the prolonged neoliberal retrenchment of welfare states and the global financial crisis have triggered precarious conditions of life for an increasing number of citizens. Current Eurostat statistics indicate that almost 24% of the European population is at risk of poverty or social exclusion, and 8% of it is experiencing severe material deprivation. In this contest, there is a need of invigorated collective actions to empower citizens, groups and institutions to safeguard and strengthen the European culture of social solidarity and equality.

Commonfare literally means "welfare of the common". It advocates a participated form of democratic welfare based on social collaboration and focused on the satisfaction of basic needs, the promotion of self-determination, and the strengthening of collective action and collaborative practices. In the Commonfare agenda, social collaboration is considered as the primary source of wealth for society and the main resource for facing difficult times. In this scenario, the commons are the democratic institutional arrangements allowing social collaboration grow, outside the dichotomy between private and state property. Following on these premises, the Book Series will collect manuscripts elaborating on different facets of collaboration from an interdisciplinary perspective. Topics of particular interest are the support of collective action and the production of collective knowledge, which takes place in face-to-face encounters, digital media, and other forms of interaction.

The Book Series acknowledges the relevance of digital platforms as primary venues of contemporary policy. It will publish critical analysis on how these platforms are shaped and operated as well as on the types of interactions occurring on them and the data they generate. These reflections on the "platform society" or "platform capitalism" will supplement ethnographically informed studies of everyday life settings and experiences, and more technical manuscripts looking at engineering solutions. The books will be published in different languages (English or Croatian or Dutch or Italian) with the aim to reach specific interested targets within the four Commonfare piloting countries and the larger audience alike. The overarching objective is to give voice to a variety of authors, opening a dialogue between different perspectives which together can drive and support the Commonfare agenda.

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INTRODUCTION

Contemporary computing has been acknowledged, even through mass media, as a contested political terrain, being it the controversies about data management in the Facebook - Cambridge Analytica scandal (Adams 2018), the protests emerging in relation to Uber entering cities (Perkins 2016) or the effects of AirBnB on the housing market (Ward 2017). For internet researchers and activists, the political dimensions of computing are not a new theme, as shown by the long-standing studies of Free and Open Source Software (Coleman 2013; Kelty 2008) or the analysis of different forms of internet activism (Christensen 2011; Hara 2008; Wallis & Given 2016).

In this trend, the most recent efforts include analysis of the forms traditional political organizations and forms of activism appropriate internet technologies (Gerbaudo 2012) or, more relevant for the scope of this paper, the analysis of the political economy of digital technologies, focusing on digital labor (Fuchs & Fisher 2015), the division of labor needed to keep digital technologies work (Ekbia and Nardi 2014; Ekbia and Nardi 2017), the new models of capital accumulation (Srnicek 2016), or the efforts to face such changes in a more democratic way (Scholz & Schneider 2017).

All these efforts are fundamental in sketching out and describing aspects of contemporary digital technologies, internet-based in particular. Nevertheless, they often miss discussions on how to build alternatives to the contemporary status quo, other than asking for public ownership of contemporary platforms (Srnicek 2016) or discussing cooperative/open forms of property of new technologies (De Paoli, Teli & D'Andrea 2008; Scholz & Schneider 2017). For this reason, in this paper we take a complementary approach and we lever on some of these analysis and on the political agenda of nourishing the common (Hardt & Negri 2009). The common can be defined as the ensemble of the natural elements such as land, air and water, and of the immaterial or artificial elements that are cultural and social products, such as languages, ideas, affects, etc. This ensemble, the common, connects human beings and it is originally neither private nor public property, although this large ensemble of material and immaterial elements is embodied in the economy and in political regimes (*ibidem*). The common can indeed be dispossessed, that is enclosed and repurposed in favor of the powerful (that being individuals or any kind of social formation, from families to nation states) or nourished. With the expression "nourishing the common", or "commoning", we refer to the whole set of practices that have the effect of allowing a growth of possibilities for people to be connected by symbols and that preserve and nourish, literally, the material resources that allow people to be tied together in a positive and liberating way.

Engaging in the agenda of nourishing the common when dealing with technologies, requires an inventory of conceptual and methodological tools available for internet scholars and activists engaged in creating working alternatives to mainstream digital technologies. To contribute to this inventory, we look at an academic field in technology design, Participatory Design (henceforth, both Participatory Design and PD), that has been historically concerned with designing and implementing new technologies being aware of the political economy of technologies. The goal is to identify how PD can support researchers and activists concerned with platform capitalism (Srnicek 2016), which is the shape that our digitally-mediated society is taking. We attempt to provide concepts and suggestions on how to design viable alternatives

to platform capitalism, with the long term perspective of going beyond capital as a governing principle of our societies (Hakken, Teli & Andrews 2016).

We will not take too much time articulating why academics are called to a renewed activism in a historical period characterized by growing social and economic inequalities, the uprising of extreme right wing political forces, and the closeness of an irreversible environmental crisis. In fact, the ten year old global economic crisis has brought many people to question the entire equilibrium that developed after World War II in the West (Calhoun & Derluguian 2011). This is visible in the strengthening of austerity measures and in the challenges brought to traditional political equilibrium. These changes are emphasized by the upsurge of new parties (e.g. Podemos in Spain, Syriza in Greece, the Five Star Movement in Italy, or En Marche in France) and or the deep changes in old ones (e.g. the Trump victory against the establishment of the Republicans in the USA, the support for Brexit by UK Tories against the leader of their own party, or the upsurge of Jeremy Corbyn as leader of the UK Labour party).

In the light of designing viable alternatives, in this book we review and discuss the actual status of PD research taking into account a reinvigorated political perspective. Our goal is to understand, from the most recent literature in PD, how such field can contribute to socio-technical alternatives to platform capitalism. We also point to the limitations of actual PD, in terms of missing elements when looking at the political agenda on nourishing the common that we propose. More specifically, we look at PD literature trying to answer the following research question: "how could PD research contribute to a renewed political research practice in the age of platform capitalism?". To answer this question, we engaged in a narrative literature review of the last years of activity in the field. This literature review starts with the framework, developed by us as a contribution to Participatory Design itself, of a Participatory Design promoting commoning practices, or nourishing the common, the ensemble of the material and symbolic elements tying together human beings (Teli, Di Fiore & D'Andrea 2016, 2017). Such framework identifies four practical strategies for scholars, professionals, and activists in the field of Participatory Design interested in building a contemporary activist agenda: 1) to identify an arena of action that is potentially socially transformative; 2) to clarify how the social groups involved in a specific technological process can connect to commoning; 3) to promote and enact an open ended design process that is facilitated but not strongly lead by the designers themselves; and 4) to discuss and evaluate how people participating in a design project see their material conditions changed by the project itself. Starting from our four strategies framework we approached the literature review, searching for those works that adhere to one or more strategies.

Relying on these four strategies, we look at contemporary Participatory Design literature to understand what scholars, practitioners, and activists committed to a common world can learn from PD itself. To achieve our goals in this book, we have structured the text as follows: chapter 2 frames the computing practices and introduces the core concepts at the base of this work, which are platform capitalism and its alternatives; chapter 3 provides an overview of PD starting from one of the first Participatory Design projects, the UTOPIA project (1981), looking at PD political agenda and introducing the common; chapter 4 describes the narrative approach used in this literature review and introduces the narratives resulting from our research work; chapter 5 discusses the relation between societal transformation and PD, getting into the details of the narratives associated to this relation; chapter 6 focuses on agency in PD, focusing on the relational dynamics between social groups and researchers; chapter 7 discusses the theme of open-ended design; chapter 8 focuses on participants', and designers', gains and their role within the design processes; chapter 9 presents the discussion of this work,

reflecting on the proposed themes, the unfolded narratives, and outlining a possible political agenda for PD; chapter 10 provides the conclusions of this work.

PLATFORM CAPITALISM AND ITS ALTERNATIVES: PROLEGOMENA TO PD NOURISHING THE COMMON

Computing is embedded in contemporary socio-economic processes in two main ways. First, computing is an enabler of socio-economic processes, for instance making possible the actual forms of global finance (Sassen 2001), including derivative products, high-frequency trading, and many other products among those that have become visible since the financial turmoil of 2007-08 and constitute the basis of contemporary finance (Tett 2009).

Second, the promises of computing were to liberate human beings from labor and alienating forms of work (Wiener 1950), yet these promises are almost in the domain of the myth. We indeed testify the widespread diffusion of what is referred to as platform capitalism (Scholz 2012; Srnicek 2016). With *platform capitalism* we refer to the form of capital-labor relationship of digital platforms with millions of users (such as Facebook, AirBnB or Uber), which is dismantling the existing institutions and forms of (economic) life, to create new forms of mediation. In platform capitalism, weakened labor and mass surveillance are crucial parts of companies business model, based on data construction and manipulation (Srnicek 2016).

Global finance and platform capitalism are, economically speaking, impossible to detach, as Srnicek argued: the exponential growth of financial markets pushes accumulated capital to look for new venues of profit generation, and platforms like Facebook or Uber establish themselves through the support of the same financial capital looking for new forms of profit. With regards to Facebook, for example, the recent information on its growth of worldwide profit since the moment the company entered the stock market, from one dollar per user to about five dollars per user (Oreskovic 2017), shows how social collaboration among "friends", through likes, events participation, etc., is sold as a commodity to advertisers (Fuchs 2012), and that is rewarding financial capital itself. Others argued that Facebook is not only rewarding finance but that the cultural logic of its algorithms is the same of derivative financial products (Arvidsson 2016). Not only do these technologies enable global financial markets but their design and deployment is a crucial part of the way through which contemporary financial market works. Not to mention that IT companies are themselves very important actors in the financial market, with huge reserves of capital to be invested and with an increasing pace of acquisition of new companies (Srnicek 2016).

As we mentioned before, platform capitalism is seen as a data-based form of capitalism that is diminishing workers' rights through various *dispositif*, such as the so-called "gig economy", or the privacy of ordinary members of the public, as data are fundamental to the way platform companies develop their business models and their infra-capitalist competition (Srnicek 2016). In opposition to platform capitalism, activists and academics are taking different routes. Two of them particularly interesting in relation to the political economy of digital platforms: platform cooperativism and commons transition. Platform cooperativism (Scholz & Schneider 2017) has been proposed through different conferences and networks, as the support to worker-owned cooperatives in designing and developing their own digital tools. Platform cooperativism re-instantiates the need for an understanding of computing in its institutional ramifications (Hakken *et al*. 2016), and it asks scholars and activists to formulate and discuss

political agendas in designing, implementing, and using technologies. Differently, commons transition (Troncoso & Utratel 2015) has elaborated policy proposals to promote the emergence of a society based on commons, connecting digital production, small scale manufacturing, commoning practices, and the role of the state in wide political agenda. Platform cooperativism and commons transition are not mutually exclusive and they point to novel suggestions for PD scholarship that seek to be politically engaged, like the idea of Open Cooperativism (*ibidem*) as a cooperative form rooted in the commons. These examples are not the sole options either, as can be seen in efforts to rethink the welfare state through the design of digital technologies (e.g. Botto & Teli 2017), in the light of the transformations of capitalism and of the institutions of the welfare state (General Intellect 2018). All these efforts converge toward looking at computational alternatives (Korsgaard, Klokmose & Bødker 2016) to platform capitalism and, more importantly, at the fact that such alternatives could grow only out of active participation of people in reshaping the power relations in society, with digital technologies as allied of political actions, a point made already in the late 1970s by the proponent of PD (UTOPIA Project Group 1981).

Therefore, in this paper, we sketch out the contour of Participatory Design as an inspiring example to design and implement computational alternatives to contemporary platform capitalism. Indeed, we ask ourselves and existing PD literature: "how could PD research contribute to a renewed political research practice in the age of platform capitalism?" and we discuss this question as one that other fields of scholarship can look at, both reflexively and in comparison with the potential trajectory of PD we discuss.

THE POLITICS OF PD: TOWARD NOURISHING THE COMMON

Up to now, we have argued that researchers and activists interested in the political dimensions of technologies could profitably look at PD as a repository of practices able to support the emergence of alternatives to platform capitalism. To substantiate this claim, we should first of all note how, historically, Participatory Design had a strong political agenda, in which design of computing systems, democratic social relation in the workplaces, and an ambition to affect policy making at the state level were intertwined.

That was clear when looking at the report of the UTOPIA project, in which the development of alternative systems, the training of workers, and the construction of a trade union's agency on computing, were related to Nordic industrial relations (UTOPIA Project Group 1981). Nevertheless, more than twenty years later, Pelle Ehn, who was also part of the UTOPIA working group, delivered a keynote address at the 13th Participatory Design Conference in which he argued that PD has become a key actor within neo-liberal pursuits. His statement was clear and straightforward:

> Participatory Design, a child of sixty-eight and the contested terrain of workplace, technology and democracy, has over the years developed into a key actor in user-driven innovation and other neo-liberal pursuits (Ehn 2014).

Such a strong statement suggests that PD has been appropriated by the process of capital accumulation, becoming a part of the same form of societal organization that was critiqued at the beginnings of PD (Bannon & Ehn 2012). This is not surprising, as such a process has invested many other forms of critique of capitalism, as suggested by the French sociologists Boltanski and Chiapello (2005), who have shown how the values and practices of the social movements of the ’60s and ’70s have been recuperated to become part of contemporary capitalism. Following their analysis, we should acknowledge how such embedding of critique into contemporary capitalism is not without friction, as the presence of values and practices that originated in the critique of capitalism can contain some of capitalism’s excesses, e.g. orienting capitalism toward “green capitalism” more than reiterating what are acknowledged as environmentally damaging practices (e.g. the use of fossil fuels).

What we claim in this section is that contemporary PD has the potential to return to its original strong political commitment of promoting emancipation and empowerment in the context of class struggle, as an “offensive practice” (UTOPIA Project Group 1981). Although being recuperated by dominant corporate narratives and often being used as a way to legitimate conservative choices (Palmås & Busch 2015), there are elements in PD that have the potential for opening up new spaces for social critique and researchers’ activism if looked at from the point of view of a cohesive research agenda and a strategy for an articulation of social alliances. In this paper we will stress how, when framed in the context of the political agenda of nourishing the common, PD can still provide examples of practices promoting alternatives to the neoliberal program. Participation *per se* was probably never enough (Beck

2002) but now more than ever, PD scholars who recognize the value of the original commitment of PD are engaging in exploring new forms of intervention, of which digital technologies are one of the key component, as the consideration of PD practices as relating, in a transformative way, with institutions (Huybrechts, Benesch & Geib 2017).

At the time of UTOPIA project, researchers in PD were siding with the trade unions (e.g. Ehn 1989) and, for example, the Participatory Design Conference (PDC) was sponsored by the Computer Professionals for Social Responsibility association. Indeed, PD scholarship has often been a practice at the boundary between activism and research, and we claim that these twin characteristics of PD scholarship can be fruitfully looked at by other scholars and activists. Specifically, our proposal is to look at PD theory and practices beginning from political economy. With this proposal, we read PD through a perspective that is in dialogue with approaches in the social sciences that reflect on the new forms of class struggle and that takes the shape of contemporary capitalism as the defining trait of societies. It should be noted how one of the most recent influences on PD from the social sciences, actor-network theory, indeed dismiss class struggle and capitalism as relevant parts of its theoretical apparatus, not mentioning them (Latour 2005; Storni 2015). As simple as it can be described, such a task is not at all simple in its implementation, for two reasons.

The first reason is that the model of industrial capitalism in which PD originated is no more the main model of capital accumulation and, equally, the forms of work have changed, becoming more precarious and low-paid for many people (Harvey 2014). In PD, twenty years ago, Greenbaum (1996) was already pointing to the transformations in the workplace that were characterizing the transition to post-Fordism, from closed supervision in a centralized workplace structured along sequential flow to decentralized workplaces implying individual/small group responsibility in a distributed flow. This implies that unions are called to evolved and to include new forms of labors such as the workers-users of the main gig economy platforms (e.g. Deliveroo, Uber, Amazon Mechanical Turk).

The second reason is that, in parallel, PD scholarship and practices have more and more focused on the local dimensions of politics and power relations rather than "offensive strategies" acting at the national and transnational level, therefore dismissing global ambitions. For example, Robertson and Simonsen wrote, in the recent International Handbook of Participatory Design (2012), that the politics of PD stands on allowing individuals to have a say on the technologies that will affect them, which is a political perspective far away from the ambition toward industrial democracy and the quality of work that characterized PD in the late '70s and early '80s (Ehn 1989).

If we look at contemporary capitalism, a couple of things emerge that are relevant for looking at PD with a renewed perspective. First and foremost, we refer to what has been called as the "life theory of value" (Morini & Fumagalli 2010) that states that life itself, from its biological aspects to the capacity of people to build social relations, is now a source of value in the processes of capital accumulation. Examples of the valuation of the biological aspects of life stands in the application of intellectual property instruments to things like genes. What is more interesting for us is instead the valuation of the capacity of people to build social relations, in which people's affects, passions and loves are transformed into economic value for platform owners.

In this case, the role of computing is crucial, in particular the role of social media and the widespread narratives on "sharing". There seems to be a consensus among critical thinkers on the pervasiveness of digital technologies as expanding the ways through which capital accumulates levering the "free labor" of people using technologies (Terranova 2000). This is one initial element that allows one to re-imagine PD looking at the political economy of

contemporary capitalism: as PD was moving out of the workplace, the same has happened to the process of capital accumulation. In fact, the capital-labor conflict is still alive, it has simply mutated in its forms and processes, as the forms of contemporary accumulation are more and more forms of "dispossession" (Harvey 2012). With dispossession, the stress is in the changes of the model of capital accumulation, from one based on industrial profit characterizing industrial capitalism, to the expropriation of resources that are then turned into sources of (financial) profit. The continuous exploitation of the environment, the privatization of public services or the commodification of human relations are all elements that point to such a form of accumulation. Nevertheless, the wealth of natural resources and of symbolic and cultural elements that social life processes should not necessarily be dispossessed. It is indeed referring to them that Hardt and Negri (2009) used the term "common", pointing to the capacity of such wealth, material and symbolic, to tie together human beings and, at the same time, to be nurtured by social practices, from contemporary examples of environmentally sustainable practices to challenges to the dominant intellectual property regime, passing by efforts toward building platform cooperatives.

In the digital domain, the process of commodification described by van Dijck (2013) – transforming connectedness into connectivity – is a clear example of how the common is dispossessed by the way contemporary digital platforms work. In fact, collaboration is promoted then it is reshaped through changes in interfaces and algorithms, to become just a commodity for sale. The benefits of social collaboration, or connectedness, are appropriated through connectivity by a minority who is dispossessing the many factually collaborating. This is our key point of attention, as it suggests a potential objective for computational alternatives, for PD, and for other scholars and activists in the digital domain: build digital systems that nourish the common instead of dispossessing it.

As we will show in the nexts chapters, contemporary PD, in its attention to publics, is already engaging with promoting the formation and strengthening of social relations. Nevertheless contemporary PD is hiding discourses on access to economic resources in its narrative and not connecting social relations to the political economy. This is a clear example of the radical contribution of our perspective: take what is good of contemporary PD, like the attention toward building social relations, and question the capacity of actual practices to challenge economic inequalities and to promote the flourishing of the common.

The premises upon which PD could nourish the common are, consistently with Hardt and Negri's (2009) contribution as summarized by a few PD scholars (Hakken, Teli & Andrews 2016; Teli, Di Fiore & D'Andrea 2016):

> (a) the anthropological priority of freedom over institutionalized power, (b) the social priority of the multitude of the poor, and (c) the affective priority of love over hate. That implies that conflicts in social life are characterized by the trials of the following: institutionalized power, the rich and hate; to contain and discipline freedom; the multitude; and finally, love (itself). (Teli, Di Fiore and D'Andrea 2016).

A few examples can help clarify these three points (all are summarized from Hardt & Negri 2009).

Slavery can help understand the anthropological priority of freedom over power, as in slavery institutions were designed to annihilate the slave will (bringing to what Patterson defined as their "social death") but, nonetheless, slaves have been individually or collectively rejecting powers throughout history, from the Spartacus led revolt in Ancient Rome to the US cotton-fields and beyond.

The social priority of the poor points to the main tenet of Autonomous Marxism: that class struggle is rooted in the social reproduction of the working class and of people's desires. Anthropologically free, the poor look for individual or collective ways to shape the world that surrounds them and the ruling class, interested in organizing labor for its own goals, deal with and adjust to the novelties emerging from the desires and practices of the "multitude of the poor".

Finally, and following Baruch Spinoza (2005), love can be conceived as experiencing joy, that is an increased capacity to act, and recognizing the cause of joy itself. On the other hand, hate is an association between sadness and its hypothetic cause. Therefore, affects are relational and, if only through love we can identify patterns for collective improvement, hate becomes the way through which collective improvement is hampered.

To summarize, free individuals, who are collectively engaged in social reproduction, love the commonality that allows for their reproduction and freedom, while in contrast established powers and the rich attack such commonality to benefit from it, levering hate, that is associating sadness with commonality itself.

In this perspective, we acknowledge, following Teli, Di Fiore and D'Andrea (2016), that scholars, in PD in particular, can become practical in their actions toward nourishing the common through four strategies:

1. to discuss their work in terms of societal transformation, that is to relate to general narratives on the relations between freedom and power, the poor and the rich, love and hate;

2. to clarify the relationship between the social groups they work with and their capacity to express and enact their agency at the social level, levering their freedom to pursue collective reproduction and love;

3. to enact an open ended design process, in which commonality itself is valued and loved;

4. to discuss the gains for the participants to a design project, showing how joy can be connected to the participation of a collective enterprise.

The remaining part of the book will outline, on the basis of a literature review we have conducted, what scholars and activists can learn from contemporary PD, read as already engaging with these aspects, and what is missing to be done to explicitly reinvigorate PD political agenda, a potential space for future collaborations and alliances.

LITERATURE REVIEW: A NARRATIVE APPROACH

At the basis of this book there is a wide literature review that aims at understanding the trajectories of contemporary PD that can contribute to a renewed political agenda. In fact, nowadays, we can observe how the efforts toward working on the political agenda of PD are increasing. The past editions of the Participatory Design Conference (PDC 2016 and 2018), are addressing the political role of design in an era of participation pointing to the importance of the political theme for PD researchers. Moreover, if we consider that both keynote speeches at PDC 2014 focused on the role of utopias in design, the picture that emerges suggests that there is an intellectual space supporting critical reflections and hints at the relevance of design and participation in order to hinder contemporary inequalities. As a guidance in the investigation of the trajectories of this renewed political engagement, we adopted the categories already proposed by Teli, Di Fiore and D'Andrea (2016) as one of the outcomes of their PD project with a digital Think Tank, which highlight the effort that PD practitioners and researchers should have in: i) identifying an arena of action to address societal transformation; ii) revealing the relations among the different social groups, supporting their agency; iii) promoting an open ended design process; iv) and in being engaged in discussions on the conditions of the participants, reflecting on how to improve them, and how the design process brings them gains. We summarized then these four themes in labels: Transformative; Agency; Open Ended; Gains).

In the light of the thickness of these categories, we decided to investigate them in depth, performing a literature review, in order to understand how PD is already engaging in similar practices or what should be done to actually expand the inventory available for scholars and activists, in PD and beyond, with such a lens. Literature reviews support the understanding of the state of the art in summarizing evidence, identifying possible interventions and providing frameworks (Kitchenham *et al*. 2009). As anticipated, we looked at existing literature to make a diagnosis of the conditions of PD on nourishing the common, in order to identify practices to be promoted for future actions and to be added to the proposed agenda. Such diagnosis, discussed at the end, is done in relation to the three priorities identified before, stressing the relations that freedom, the multitude, and love, have with the political economy of the common and its nourishing practices. To make this diagnosis, we needed to explore the weight and the fluidity that the matters identified by Teli, Di Fiore and D'Andrea (2016) have had within PD literature of recent years. Thus, we investigated the trajectories of the political commitment of PD by working on the underlying narratives of our four subject matters: Transformative; Agency; Open Ended; Gains. In order to address this purpose, we used a narrative review approach, since it is a holistic approach to literature review that aims at investigating matters without constraints, working on sense-making with a comprehensive rationale by being open to new insights arising from the richness of the contributions considered (Collins & Fauser 2005). In terms of scope, our work is more extensive than recent literature reviews in the field of PD, like Halskov and Hansen (2015) or Bossen, Dindler and Iversen (2016), who focused mainly on PDC and particular journals' special issues. Moreover, their reviews were self-reflective tools for PD practitioners and academics, while our work aims at foresee a dialogue between PD practitioners and academics and other scholars and activists (Figure 1).

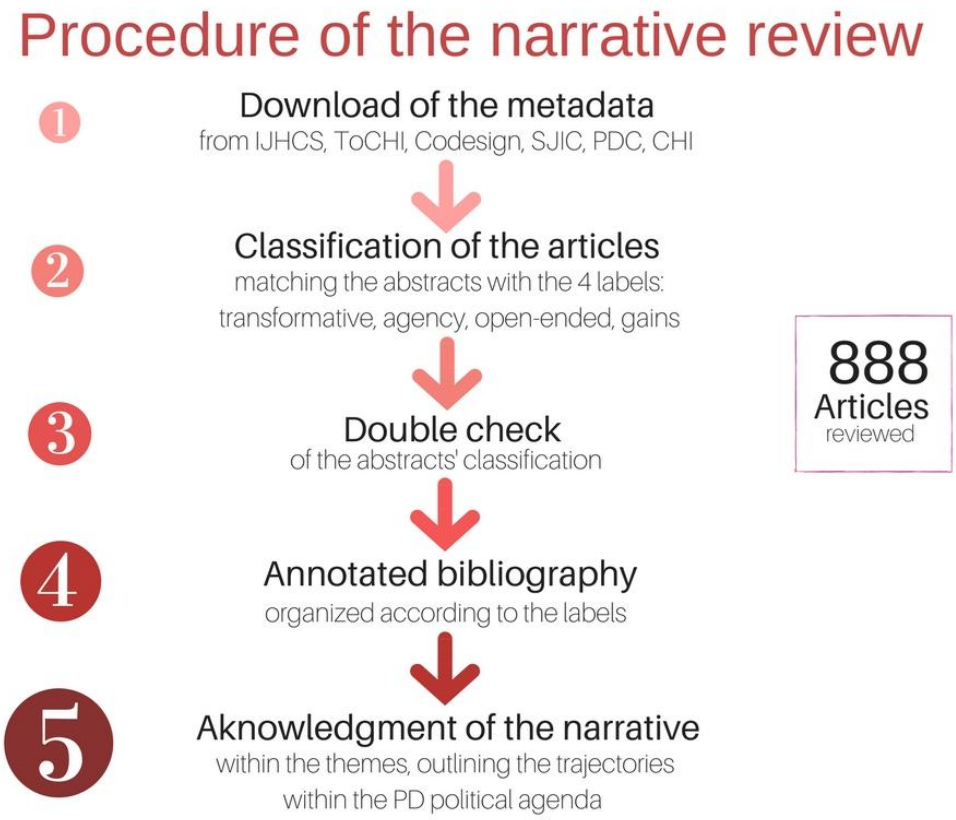

Figure 1: The narrative review process we performed

In order to reconstruct a meaningful and significant review of the characteristics of the political thread that is guiding the PD community in recent years, we analyzed 888 articles from 2010 to 2016[1]. We focused on the main venues where PD works are published and discussed, selecting journal papers and both long and short conference papers from the following journals or conferences: International Journal of Human Computer Studies (IJHCS), ToCHI, CoDesign, Scandinavian Journal of Information Systems (SJIS), and conferences: Participatory Design Conference (henceforth PDC) and Computer-Human Interaction Conference (henceforth CHI).

We fixed a time-span of 4 years for Journals and annual conferences, therefore we had journal articles and CHI conference papers from 2012 to 2016, and we selected the last 4 editions of the bi-annual PDC, including PDC conference papers from 2010 to 2016. The procedure that we adopted had five steps (see Figure 1) that allowed us to go in depth in the investigation of the categories that guided our work.

First, using the open-source reference manager Zotero, we downloaded the meta-data from the website of the PDC proceedings and from each journal issue from the journal websites, except for CHI and SJIS. In the case of CHI, we limited our research with keywords "participatory design", "co-design", "codesign", because of the large amount of non-relevant PD papers. Moreover, in the case of SJIS, we recognized that PD is now closer to HCI and design more than information systems, as it was when PD was focusing on the workplace. In

[1]The research work was conducted between the end of 2016 and early 2017, so we haven't been able to include, for example, the papers discussed at PDC 2018, or in any other venue more recent than 2016.

both cases, we used the ACM Digital Library and the SJIS internal search engine, selecting papers based on the author's keywords "participatory design", "co-design", and "codesign". Instead for IJHCS (that recently hosted a similar literature review on PD - Halskov and Hansen 2015), ToCHI and CoDesign (that hosted a special issue on PD and ANT recently - Storni *et al.* 2015 - and another one on PD in the public realm - Huybrechts, Benesch and Geib 2017), we downloaded all the articles and we classified them on Zotero by analysing the abstracts (see Table 1).

Conference Journal	N. of paper reviewed
IJHCS	349
PDC	208
ToCHI	162
CHI	92
CoDesign	67
SJIS	10
Total	**888**

Table 1: n. papers which abstracts have been reviewed based on conferences and journals

In doing so, we proceeded with the reading of the abstracts of the downloaded papers and, individually and separately, we classified each of them with one or more of the 4 labels we used to refer to the 4 themes highlighted by Teli, Di Fiore and D'Andrea (2016): Transformative; Agency; Open Ended; Gains. At this point we discarded those papers that were not labeled with any theme.

Third, we performed a double-check process between us, tagging 5 papers tagged by another of us: author A tagged 5 papers of author B, author B tagged 5 papers of author C, etc. The inter-reliability rate, with perfect overlapping of the tagging strategy, was 70%, from 3 papers out of 5 to 4 papers out of 5. The divergences in categorizing were discussed and used as a way to inform our collective interpretation of the categories employed.

After reading the papers individually, we used Zotero to create an annotated bibliography based on the 4 labels, dividing the papers for each label. The result is: label 'Transformative' 52 papers, label 'Agency' 161 papers, label 'Open' 48 papers, label 'Gains' 104 papers (see Table 2).

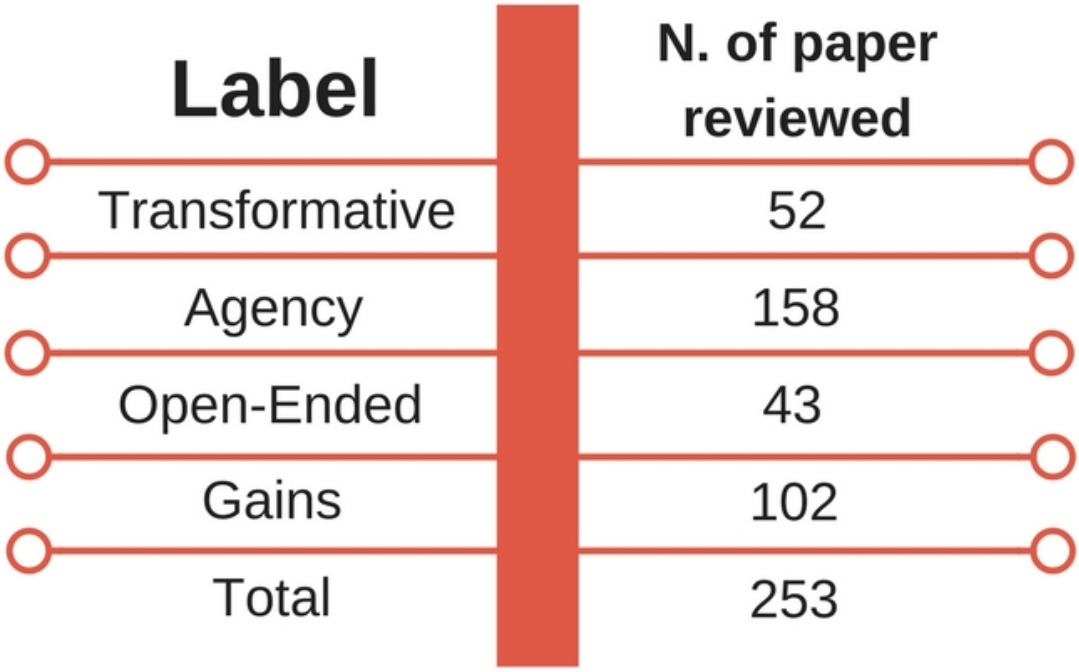

Table 2: n. papers which abstracts have been reviewed based on selected labels. Note: many papers have more than one label)

Lastly, from the annotated bibliography we acknowledged the emerging themes and narratives using the aforementioned narrative review approach. Reading the abstracts, we realized that the labels 'Agency' and 'Gains' looked conspicuous, but going in depth in the content of the papers, we acknowledged that many of them gave insignificant contributions related to the labels. The results of our analysis of the emerging narratives is visible in the following Figure 2.

The narratives of the four subjects of matter have been elaborated further in the following chapters, outlining the characteristics of contemporary PD that can be leveraged to build computational alternatives to platform capitalism.

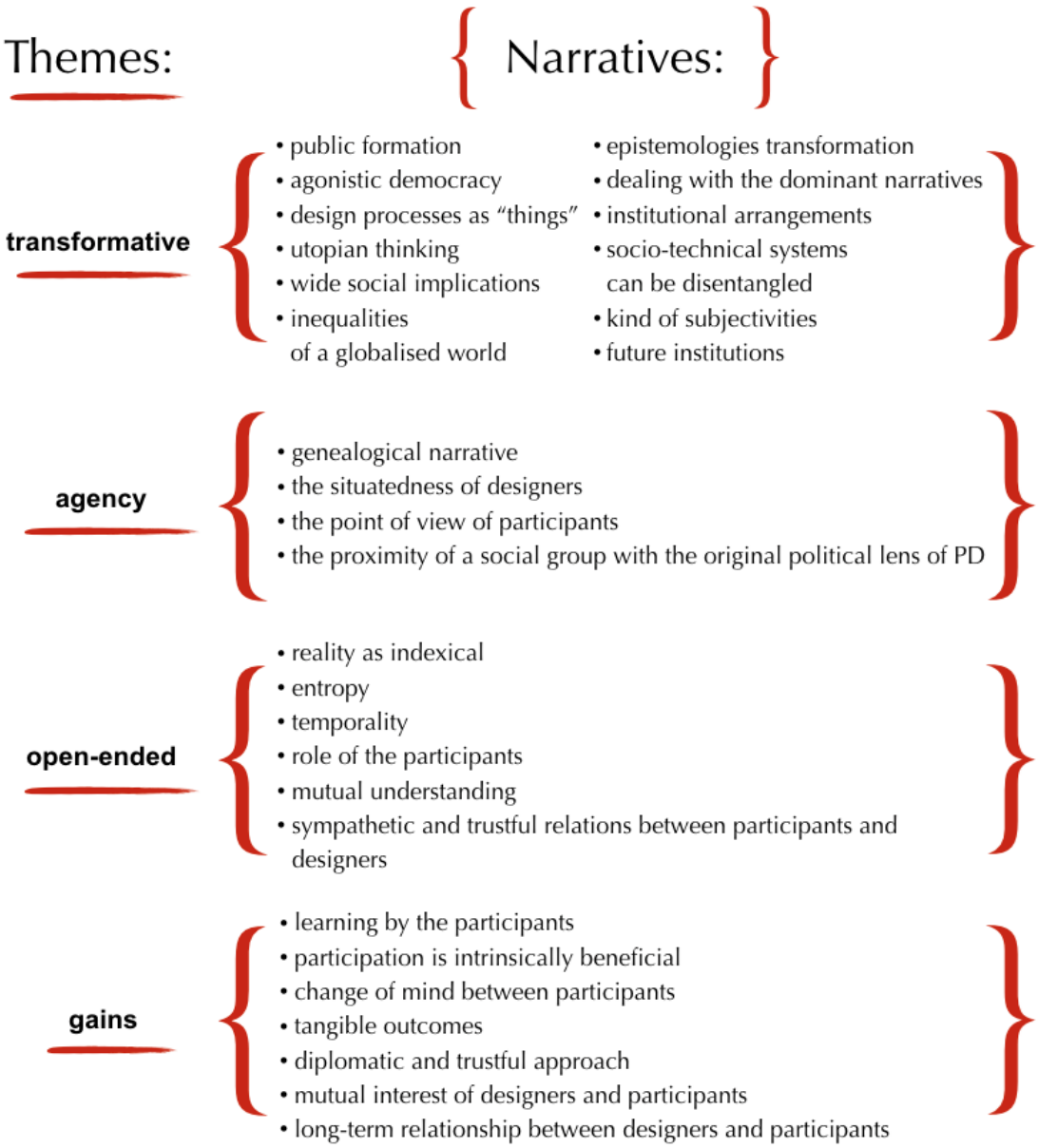

Figure 2: Articulation of the narratives emerged from the themes of the literature review

SOCIETAL TRANSFORMATIONS AND PD

Looking back at the report of the UTOPIA project (UTOPIA Project Group 1981), a few sentences from such a seminal work stand out to the reader. For the purpose of this section, one is particularly relevant – the way the problem description for the project is framed:

> The same initial position must pervade the discussion on the technological alternatives. The relationship between the classes, profit, competition, markets, etc., all have a bearing on technology and create different conditions which affect the quality of work and products [*ibidem*: 8].

Reading this quote, it is quite obvious which was the social contexts that framed the project. First of all, the reference to class struggle and the capital-labor relationship was a paramount aspect, as well as an understanding of political economy and the effect it has on the quality of life of workers and on production. Second, technology was immediately framed not as a given, or purely a technical matter, but as a product of existing social relations. Indeed, the whole section of the UTOPIA report titled "Problem description" was characterized by three subsections: the first one (titled "Influencing technology") was giving a general sense of how technology was adopted in the workplace in the light of class struggle and the organization of work; the second one (titled "What can trade unions do?") was discussing the role of the proposed design methodology in the frame of strategies for the trade unions to articulate their demands; finally, the third one ("What can research achieve"), was defining reasonable expectations for what could be achieved, without stepping back from political ambitions, as the proposed methodology was framed as "an offensive strategy" [*ibidem*: 11], not preserving the status quo but, indeed, proposing alternatives. We can summarize then UTOPIA's narrative on the capacity of PD to be socially transformative along three main points 1) consider technology as a social construct that 2) is embedded into class struggle, including the potential strategies of the labor movement, and 3) can be approached offensively, through the construction of computational alternatives. This is indeed the starting point of Teli, Di Fiore and D'Andrea (2016), and it reconnects the actual effort to strengthen the political agenda of PD to a trajectory that has been present since the beginning, although in a different socio-economic context, and that now requires adaptation to the context of platform capitalism.

Thirty five years after the publication of the UTOPIA report, what has happened to the potential of social transformation in PD? Our literature review provides some cues on that, and in the remaining part of this chapter, we will outline the main narratives we identified. Looking at the recent work by Pelle Ehn, one of the members of the UTOPIA project, we can identify a few elements that allow for a re-articulation of the political perspective in contemporary PD. First of all, there is a renewed attention to *utopian thinking* (Ehn 2014) in parallel with similar efforts among HCI scholars who are appreciating PD's initial focus on emancipatory politics (Bardzell 2014) and among scholars engaging with a critical assessment on the role of computing in contemporary society (Hakken, Teli and Andrews 2016). Utopian thinking stands for envisioning an agenda for a better future, recognizing the limits of the utopian project but without giving up on it as a way to imagine different potentials for our collective future as humankind (*ibidem*). A narrative on utopian thinking is therefore the first element for contemporary PD researchers co-participating in social transformation. Second,

there is a narrative on *design processes as "things",* in which the design outcome, as well as the process, is open and contested, subjected to multiple "design games" that redefine the object of design itself (Ehn 2008). It is in this line of thinking that PD can be considered as a set of democratic design experiments, oriented to *the formation of publics* (Binder, Brandt, Ehn & Halse 2015), the third elements we want to stress here. With formation of publics, we refer to the possibility of people to aggregate around issues they are concerned about, even without previously existing relations, or with minimal ones (Le Dantec 2016). Such experiments, as in the case of the Malmo Living Lab, are embedded into "future making", that is to strengthen the voice of marginalized populations in a context of agonistic democracy, recognizing the "ineradicability of antagonism and the impossibility of achieving a fully inclusive rational consensus" (Mouffe 2013), not through projects but through the alignment of different social contexts and their spokespersons (Björgvinsson, Ehn & Hillgren 2012). Another example is the effort to develop design techniques that connects past, present, and future in collective and public efforts, like in the case of the "counterfactual scripting" developed by Huybrechts and Hendriks (2016). Design becomes, in such a way, an effort of infrastructuring and *thinging*, the processes of building contested and changing elements that combine artefacts and symbols, with the aim of satisfying social needs and to build new social relations. The role of the designer becomes, in such a narrative, the one of *infrastructuring agonistic public spaces* that facilitate constructive controversies on the issue at stake (Björgvinsson *et al*. 2012) and such public spaces go beyond the workplace, aggregating people and composing collectives, even including affective dimensions in understanding attachments, the ways in which people get close to a specific design process (Le Dantec 2016; Teli, Bordin, Menéndez Blanco, Orabona & De Angeli 2015).

The politics of contemporary PD appears, therefore, as more concerned with controversial issues and marginalized populations than with the capital-labor conflict that characterized the efforts of the late 1970s - early '80s. We agree with Ehn that part of PD can indeed be seen as part of "neoliberal pursuits" (2014) and what we want to stress here is that we need to augment actual PD, even the most politically engaged one, reintroducing a criticism of capitalism, while also being aware that it is impossible, and not even desirable, to replicate exactly what was done almost forty years ago. Therefore, while in the next chapter we will discuss in greater depth the role that involved social groups have in contemporary PD, here we want to stress how only a few papers among the ones we found have elaborated a narrative on the potential for *wide social implications* of a design process. For example, Agid (2016) has discussed themes of situatedness and infrastructuring in terms of a long term commitment with a social justice organization willing to intervene on contemporary policing and prison system. Previously, Bratteteig and Verne (2012) have discussed how Science and Technology Studies concepts could be framed as possibilities for actual intervention in the public sector (the tax office, in their case). Other examples include the narrative giving an account that starts from the *inequalities that characterize a globalized world*, giving voice to: 1) participants coming from non-Western cultures (Chawani, Kaasbøll & Finken 2014; de los Reyes & Botero 2012; Hakken & Maté 2014; Kapuire *et al*. 2014; Mainsah & Morrison 2012, 2014; Offenhuber & Lee 2012; 2) people "peripheral" in the West, like residents of "disadvantaged neighborhoods" (Frandsen & Petersen 2012), children with autism (Frauenberger, Makhaeva & Spiel 2016), aboriginal women (Madden, Cadet-James, Atkinson & Lui 2014), or teenagers (Ashktorab & Vitak 2016; 3) intermediaries like NGO workers (Dearden *et al*. 2014; Dombrowski, Hayes, Mazmanian & Voida 2014).

In almost all of these cases, the potential for transformation that is part of PD is cultural and epistemological, through the inclusion of the voices of people who are not normally

included in design processes as proper stakeholders and making them active designers (e.g. Holger *et al.* 2012). The narrative on the *transformations of the epistemologies* of PD resonates with recent efforts of combining PD with theories coming from Science and Technology Studies, like Actor-Network Theory (Lindström & Ståhl 2015; Storni 2015). Moreover, the epistemological accent has promoted new inquiries in what count as rigor and accountability in PD (Frauenberger, Good, Fitzpatrick & Iversen 2015) and on how to describe participation itself (Andersen, Danholt, Halskov, Hansen & Lauritsen 2015; Vines, Clarke, Wright, McCarthy & Olivier 2013). The emancipatory potential of a perspective valuing the epistemologies and culture of what are often conceived as marginalized groups stands in opposition to the focus given, in the more industry-oriented parts of HCI and PD, to the user as a customer and not a stakeholder (Bødker, Christiansen, Nyvang & Zander 2012; Boer, Donovan & Buur 2013; Briggs & Thomas 2015).

In our review, the elements that suggest PD scholars are looking to renew the attention toward their social and political outcomes is not limited to questioning the status of the object of design, from an artefact to an open and contested thing, or to epistemologically include a diversity of perspectives extending to the kind of voices affecting a design process. It also relates to dealing with, and to sketching out new narratives able to *deal with the dominant narratives* in the IT social world, like that on innovation as the emergence of new products that can be marketed. The previously mentioned work by Björgvinsson, Ehn and Hillgren (2010, 2012) is one example of that, as well as the work by De Angeli, Bordin & Menéndez Blanco (2014), in which the authors address the issue of infrastructuring not only from the point of view of participatory design but also from the perspective of participatory development. With this wording, the authors refer to direct involvement of the prospective users in the design and development, including coding, of the software they need. They propose a model, the "hourglass" -given its graphical representation- in which participatory development is achieved through two dimensions which are contemporary to each other: the formation of what we can call a public and the construction of the technical components (shared source code, APIs, and servers) that allow participatory development itself. It is not surprising that the same authors, in later work with others, arrived to question people participation not only in design and development but also in the *institutional arrangements* regulating the way in which design, development, and use take place (Berger 2014; Huybrechts *et al*. 2017; Teli *et al*. 2015).

In this way, participatory design and development got closer to recent reflections on PD and the *commons* (Marttila, Botero & Saad-Sulonen 2014), as well as to our perspective on the *common* (Teli 2015; Teli *et al*. 2016, 2017). That perspective goes beyond the accent on the epistemological and cultural inclusion of new voices in PD, and it does so expanding on the practices in which people can engage, not limiting them to the design process. In fact, people who have skills to code (professional developers, amateurs, students, etc…), for example, or to collectively manage digital resources (communicators, economist, facilitators, etc…), can actually engage in coding and collective management, while the design process favors the alignment between the skills of the participating people and the processes of decision making (Bratteteig & Wagner 2014). The way through which *socio-technical systems can be disentangled* (Bratteteig & Verne 2012), opening up space for rethinking systems themselves, becomes therefore a crucial narrative, as well as the *kind of subjectivities* that are involved in the PD processes, with all their contradictions as a social group (Roedl, Bardzell & Bardzell 2015). The few reflections on how to get PD to engage with global phenomena, like climate change (Edeholt & Mainsah 2014), are also relevant when dealing with institutional settings and new subjectivities. Indeed, what we can stress as a potential basis for a renewed

emancipatory politics of PD is the centrality of institutions, existing and future ones, as well as of the social groups PD scholars work with (Hakken *et al*. 2016).

The narrative on *future institutions*, in the form of commons or worker-owned cooperatives for example, brings us to discuss one of the most interesting parts of our review, the contribution by Light & Akama (2014) on what they refer to as "the politics of care". In line with the thinking and practices oriented to "future making" (Björgvinsson *et al*. 2012), the two authors frame their political attention in design toward the "structuring of future social relations" with an attention on local change in order to build a "democratic future world". They bring into the debate the feminist concept of care as a relational concept of interdependency, and they see PD as an effort of designing connection among people, supporting resource weak stakeholders and exposing power relations. Moreover, their interpretation of the design process is one of "becoming with" (Akama 2015), in which the designer and the people s/he works with are transformed in the process and the designer herself gets a new role (Lee & Ho 2012). Indeed, Light and Akama stress how the design work needs to focus on relations as a way to show *the invisible cement* that constitutes collaborative practices.

Nonetheless, what is this invisible cement? What is missing in contemporary PD?

Our answer is that the approach we propose, combining an understanding of the relationship between freedom and power, the multitude of the poor and institutions, and love and hate, provides a language for a rich description of the invisible cement, of what is missing, that, in our language, has a name: the common. Moreover, such an approach provides the possibility of bring back into the picture the political economy of contemporary capitalism, considering the common both in its materiality and its symbolic and cultural aspects. In fact, it suggests a way to deal with the conflicts in contemporary societies that deal with the dispossession or the nourishing of the common itself. Therefore, the language we propose is foreseeing a re-imagination of PD that can allow for combining fruitfully what PD scholars have already questioned and, at the same time, expand on it by bringing back a wider perspective on social transformation, including the *economic relation between subjectivities and the common*. To refer to this language in design requires, as stated previously and elsewhere (Teli *et al*. 2016, 2017), a discussion on what are the forms of agency participants have in society and in the design process, how the design process work in order to accommodate such diversity and what are the benefits different social groups get from a PD process.

THE AGENCY OF SOCIAL GROUPS: SHOWING, ENACTING, DEVELOPING

In this chapter we draw from our literature review the main narrative trajectories that critically consider the social groups involved in PD projects. Our aim here is to clarify the relationship between the social groups that researchers and designers work with and their capacity to express and enact their agency. Following up UTOPIA report n°2, we acknowledge that the roles of the involved social groups are shaped also by their relationship with technology. Political consciousness is described in the aims of the project: "to develop, evaluate and study conditions for trade union technological development as a technological/political strategy for the trade union movement" (UTOPIA Project Group 1981: 25-26). Nevertheless, it is not only the relationship that participants have with technology that is responsible in shaping their agency, but in the same way the relationships participants have with other stakeholders and with the researchers/designers is relevant, since they are tied together by power-relations of various natures, either economical, working or affective. In this sense, Akama (2015) represents an exception, since she describes one project in which the researchers/designers were also the "final users" and therefore these power-dynamics were more balanced.

This entanglement of different actors with different roles and agencies is the variety of participation that Bratteteig and Wagner analyze and "disentangle" (2014). In the conclusions, they stress the importance of a "participatory result" (2014: 114) and how participatory design decisions in a project depend on the quality of mutual learning, as a way to understand the other's' position yet being able to maintain one's' own. In fact every actor sees the project from their own point of view, with their own peculiar meaning and understanding. Yet, Bratteteig and Wagner conclude that if the users "can see their position represented in the participatory result, they know that they have participated" (2014: 117).

We think it is crucial to move further and uncover deeper roots that shape power-relationships among actors and, therefore, their agendas. Following the interdisciplinary sensitivity of PD scholars with a background in history (Botero & Hyysalo 2013), we stand for a *genealogical narrative* of PD projects, in which the economical, working and social conditions in which the project is grounded are visible. As in the study of history and historical events, it is important to know the contextual background in order to understand the conditions in which a project evolves, including constraints, economic availability and political expectations. It is important to acknowledge who started the project and under what conditions, especially in the field of ICT, where there is an implied push to implement new technologies, no matter what.

According to our narrative literature review, we identify three narratives that acknowledge the agency of the social groups involved in PD projects: i) *the situatedness of designers*, ii) *the point of view of participants and iii) the proximity of a social group with the original political lens of PD.*

The first narrative considers the *situatedness of designers* (Agid 2016; Akama 2015) which means making careful considerations about one's own position, recognizing to be dynamically situated in a constellation of relationships and infrastructures with others that continually evolve. It is in acknowledging the complexity of relationships between people, systems and

infrastructures that it is possible to realign our agenda with PD's early political focus. Furthermore, the awareness of the designers allows the conceiving of the designer not as external facilitator of a project but in the middle of the continuum of it. This narrative unearths an important self-reflexive turn, since it makes space for all the contingencies and unpredictable events that are academically left outside the scientific production, yet they are very much present as part of it (Moncur 2013). Nevertheless, it remains rarely explained the relationship between designers and participants, that can only be guessed from the acknowledgments section at the end of the papers. Few are the exceptions (e.g. Botero & Hyysalo 2013) in which participants voluntarily came to the designers or in which the participating children are siblings of the university staff or friends of them, recalling a familiar context between scholars and participants (e.g. McNally *et al.* 2016).

Between the situatedness of the designers and the participants' points of view we find a tension that is specular and reflexive. This tension is articulated as the second narrative we identified, related to the agency of social groups. When the point of view of the participants is fostered, the designers have unforeseen insights that disrupt their assumptions. For instance in Vines *et al.* (2012) the authors have to face opposition from some elderly participants in designing new technologies for online payments in Britain. These oppositions are justified and the authors realize that this could be a case where "The implication here then was strongly towards non-design" (2012: 1190). Nevertheless, they continued with a paper-based design, negotiating with the participants some implications for design. The reasons to push towards implications for design are not given in this specific case, beside the pressure of making checks adhere to the national standards set by the Cheque & Credit Clearing Company. Increased transparency on the relations between designers, institutional stakeholders, and participants, could help in understanding a PD process and its ethical and political implications. Ethical issues from the point of view of the participants are addressed by McNally *et al*. (2016) who describe Kidsteam, an established exceptionally long-term project (30 years) of engagement with children and teenagers in design projects. Their research question is: "How do children view ethical issues around their role in Participatory Design teams?" (2016: 3595). The authors refer to the Belmont Report (Resea & Ryan 1978) concerning the ethical aspects that must be guaranteed in a research project that involve human beings, according to US law. They argue then that among the variety of methods and approaches, PD shares with the Belmont Report the same intrinsic ethical attention. In fact, PD ensured they were "adhering to beneficence through measures that address risks and benefits, - adhering to justice through ensuring procedural fairness, - and maintaining respect for persons through measures that promote informed consent to participation" (McNally *et al.* 2016: 3597). Because of this commonality PD was the most eligible approach. The authors identify four themes to point their attention to: anonymity, consensus, power-relations between adults and children, use of ideas, recognizing the awareness of children in these matters, and their heterogeneous agency. Nevertheless, children recognize their contribution in the projects, seeing their positions represented.

A third narrative in which PD is performed is about the *proximity of a social group with the original political lens of PD*. If in the late '70s and '80s, the closeness to the working class was seen as a way to influence wider society through the alliance with trade unions, nowadays the contemporary focus on peripheral groups is seen as based on the need of these groups to become visible and recognized. People with disabilities (Slegers, Wilkinson & Hendriks 2013), children and ethnic minorities (Fisher, Yefimova & Bishop 2016) and seniors (Cozza, Tonolli & D'Andrea 2016) have been recognized as canonical peripheral social groups that struggle to be heard in civil society and design projects. Instead, it is from PD experiences that it is

possible to discover an unedited point of view of the participants, deconstructing the normative and often negative images of the user group under which they are labeled. For instance, in Fisher, Yefimova, and Bishop (2016) it is explained how during workshops with a Latin-American community of teenagers, visual data and music influenced information consumption and production, since music is a key aspect in the participants' culture. Or in Cozza, Tonolli and D'Andrea (2016) it is showed how seniors can enact a strong agency, opposing and protesting industrial decisions that are taken at management level during the project, to the point of refusing the already established design outcomes of the project. The conceptual consequence for industry of Cozza, Tonolli and D'Andrea (2016), with participants reluctant and angry, can be found also in Taylor *et al.* (2015), who describe how a British telecare product company promoted the re-design of some of its products with a PD approach. The products were originally designed by the company engineers and the local telecare providers, relegating PD to a marginal role in promoting the acceptance of already designed and developed technologies, in what Bannon and Ehn defined as "user-centered" shift (2012).

We recognize, following Binder Binder, Brandt, Ehn & Halse (2015) suggestion, that PD researchers can be the facilitators in constructing agonistic arenas for fostering the formation of publics starting with marginalized social groups, increasing the capacities of such publics to affect social life. If we want to draw the proximity of social groups to nourishing the common, the center could be represented by existing social movement (such as the unions for the UTOPIA report), already recognized commons in making (Seravalli 2012), and future commons, when focusing on *future things* (Ehn 2008). Making the commons depends on deconstructing the stereotype of those social groups considered "marginalized" and co-construct with them an identity towards social change. The reason why they are underrepresented is normative, as the underrepresented social groups in PD are those that also have less negotiating and economical power (beside the working class): children, elderly people, people with impairments, people incarcerated, etc. Diminishing the proximity between a social group and a future in common means engaging in practices of commoning, making the groups recognize and legitimate themselves as publics, bringing social groups closer to the capacity of influencing the wider society, as it was the case for the trade unions at the origin of PD. Few indications to increase the proximity of social groups to actual social change are, for instance, suggested for healthcare design projects, but we think they can be valid for any other PD project: 1) to foster continuity of collaboration in heterogeneous groups of stakeholders, regarding their different background (Slegers *et al*. 2013; 2) to "re-design the user", analyzing the normative narratives that shape it and that are in the grounds of policy and design decisions, as is the case of ageing and HCI (Vines, Pritchard, Wright, Olivier & Brittain 2015), and in the public design domain, 3) to facilitate the creation of agonistic PD spaces for different groups and stakeholders (Björgvinsson *et al*. 2012).

Therefore, what is missing in contemporary PD?

We acknowledge that in the paper we reviewed none of the social groups involved in PD projects is described as capable of making societal changes, a capacity that was attributed to the working class up to the late '70s, but social groups are considered and involved for the very reason of being the "excluded" ones. We argue then for the necessity of *re-imagining alliances with social groups* starting from *deconstructing the normative stereotypes* that shape them, that are embodied by themselves as by the designers, leading to processes of self-reflexivity with the participants. This is partially done for instance in re-imagining ageing, thinking of it as a contextual phenomenon, as Brandt *et al.* (2010) describe the "situated

elderliness" or deconstructing institutional labels such as "active ageing" showing that it is a construct of negative ageing stereotypes (Tonolli, Teli & D'Andrea 2015).

In order to reinvigorate a political PD agenda, we argue for stating the transparency of the set-up of the project as with the social groups we work with as in the academic papers. Clement and Van den Besselaar (1993) arguing not to underestimate the accuracy and transparency in reporting projects, suggested that "it would be particularly helpful if the specific technical and organizational contexts (principal stakeholders, interests pursued, resources available, scope of activity, and so forth) were included explicitly in accounts" (*ibidem*: 36) as part of the methodology for reporting projects. *Clarifying the relationships among different actors, like participants, designers, funding agencies, public authorities* would be of great help in critically reflecting on the agency of the latter, since it is not independent from the agency of the other stakeholders, including the designers, funders or academic evaluators. Boer, Donovan, and Buur (2013) clearly explicates the intrinsic agency of the designer reflecting on the provocative prototypes they designed, wondering: "But are provotypes a way to push through a particular viewpoint? Or are they a means to facilitate discussions about different viewpoints on the same concept? When we refer to the politics in multi-stakeholder projects we refer to the power relations and the rationale to guide and ground decisions. Choosing a tension from a web of tensions between stakeholder groups and provoking them is a political act" [*ibidem*: 87]. Similarly, Read *et al.* (2013) pose the ethical question of providing a meaning to research while explaining it to the participants, in this case a group of children in Uganda. The authors put at the forefront the matters of: research reasons, funding, long-term research and academic publishing. They use two approaches: 'honest' and 'excuse'. The "honest approach" is the utilitarian one, clarifying the researchers' direct interests (earning a salary, pursuing a career). The "excuse approach" is the approach for a superior 'good', which is the persuasion of the goodness of the research, which is 'good' if it is pursued in the way proposed by the designers. Their focus is that the transparency of the design process helps to unearth the micropolitics in action in every design project, a perspective that we think should become more visible in all PD research. The way through which this can happen during a design process, points directly to our next theme, the open-ended character of the design process itself.

OPEN-ENDED DESIGN: STRESSING THE BOUNDARIES OF THE DESIGN PROCESSES

This chapter addresses the understanding of a design process as open-ended, conceiving it as a serendipitous progress with low-defined boundaries. In this way, we want to analyze the idea of open-ended design by exploring what the theoretical argumentations that have been directly and indirectly addressed in PD literature during the last years are. Such themes highlight the need to enrich the design process by adding temporal considerations, focusing on the imbrications between human, relations, spaces, knowledge and materials. In this way, the conceiving of a design process as open-ended brings to an indexical, situated and serendipitous understanding of the design reality, in line with theoretical trajectories that already existed in PD, such as continuing design (Redström 2008), design-after-design (Ehn 2008), design from somewhere (Suchman 2002), and unfinished design (Ehn 2008). This claim has a long tradition in PD, and traces of it can be found as far back as the UTOPIA project. UTOPIA discussed open-ended design showing how trade unions could influence technology by having considerable "degrees of freedom" in designing "contents and organization of work" (UTOPIA Project Group 1981: 7). The report stresses the importance of focusing on supporting meaningful experiences, pursuing processes without barriers that can enhance the "ability to influence technology" among people (*ibidem*).

The PD literature we considered seems to draw open-ended design as a concept that is stratified in different layers. Specifically, we identified sic narratives that characterize and frame this concept, which are: (i) indexicality of the reality; (ii) entropy of the design process; (iii) temporality of the design process; (iv) role of participants; (v) mutual-understanding; (vi) relation between designers and participants. In the following part of this chapter, we describe as continuum the narratives of open-ended design that are arising from the PD literature we revised.

The first narrative is related to the conception of *reality as indexical*. Talking with Garfinkel (1967), such vision states that design contexts are situated and linked to local contingencies. In particular, this view wants to reveal the influence of the individual ideas on the creation of collective understanding in the groups of participants involved in a design process. Working on open-ended design, one of the narratives is related to the acknowledgement that practicing design is always considered a situated or "in situ" (Dolonen & Ludvigsen 2013) evolving activity. Indeed, socio-technical environments are conceived as a dynamic phenomenon (*ibidem*) that is influenced by unpredictable individual, social, organizational and technological contingencies (Akama 2015). Akama (2015) writing *Being awake to Ma*, laid the foundation of this ongoing trend in PD, describing the reality where human and artefacts meet as a "becoming with". Using becoming with she referred to "how we are transforming and becoming together - among beings and non-beings, systems and power, and among places and atmospheres - by immersing in emergence and chance" (*ibidem*: 262).

From this perspective, there is a need to widen the conceptual range of the design processes in order to better contextualize its dynamics (Hussain & Sanders 2012). On the one hand, it brings into being a call for a situated understanding of reality, focused on micro-social

dynamics, like mapping heterogeneous conceptions of participation in place (Halskov & Hansen 2015). On the other hand, observing the empirical side of these studies, a tangible effort in exploring the phenomena that recognize the situated nature of reality emerges, like studying the variability through which the participants can approach a technology (Dolonen & Ludvigsen 2013). These studies recognized in such way that studying and taking into account the instability and the volatility of the technology can be an essential resource while designing (Light & Akama 2014). A quotation from Donna Haraway perfectly describes the thickness of this narrative of open-ended design "Reality is an active verb, and the nouns all seem to be gerunds with more appendages than an octopus" (Haraway 2003: 6). This sentence summarizes the reason why many PD researchers are recognizing this specific essential attribute of being *in becoming*, embracing such ing-fetishism, in order to better grasp the multitude that arise from, and in, designing. In this way, this narrative addresses a specific conception of the *affordances* of the design contexts.

In line with the previous narrative, the one on *entropy* emphasizes how the contexts that host the design processes are considered as an imbrication (Bratteteig & Verne 2012) and an intertwining of subjects and objects (Bratteteig & Verne 2012; Eriksen, Brandt, Mattelmäki & Vaajakallio 2014). In this scenario, this trend highlights that facing the complexity of reality brings about the need to work on a continuous process of "entanglements and disentanglements" (Bratteteig & Verne 2012) of (f)actors. Thus, it emerges that there is a need to fragment the processes in "small steps" (Joshi & Bratteteig 2016), which can give us the opportunity to observe the mosaic of the dynamics that constitute a design process. In this way, the exploration of a context by embracing its complexity can bring about a "reassembled" scenario in order to convey sense making (*ibidem*). From the literature many concepts are arising which are used to get orientation on this entropy, such as "mashwork", "patchwork" (Lindström & Ståhl 2015), "intertwinement" (Bratteteig and Verne 2012; Eriksen, Brandt, Mattelmäki & Vaajakallio 2014). In particular, Ehn claims the need to go in-depth into the "unfolding things of design" (Ehn 2014) by exploring the layers of its entropy (Hussain & Sanders 2012). In the narratives of open-ended-design, entropy seems to be outlined as a zero point from which the evolution of a design process can be charged, which, in this case, are understood as the amount of possibilities that can arise from the situated contingencies of the design situations.

Conceiving design as open-ended, the narrative on *temporality* stresses the need to explore the temporal layers (Hussain & Sanders 2012) and deconstructing the canonical understanding of the flow of a design process. In this scenario, the narratives on open-ended design address the design processes as a continuum from an initial entropy to the results of a process (Botero & Hyysalo 2013), paying attention and awareness to the impermanence of reality (Karasti 2014). The papers that we selected describe processes characterized by several iterations (Joshi & Bratteteig 2016) or so-called "feedback loops" (Modol & Chekanov 2014) that had the aims of transcending the established boundaries of design, expanding the process. In these pieces of work, the idea of temporal continuity is tangible. Both the entropy of the contexts and the temporality are considered as a becoming with (Akama 2015). In this way the concept of *Ma* helps in understanding how to conceive this temporality, calling for a need of "processual sensitivity" in the design realm (*ibidem*). Analyzing this narrative, it emerged how the boundaries of a design process - conceived as a co-evolution between humans and materials - are not well defined, since the confines "between design, redesign and maintenance are blurred" (Karasti 2014). However, according to Stuedahl and Smørdal (2015), it is possible to outline some "obligatory points" by attempting to articulate a process. The use of the temporality as a lens to explore a design process can support us as PD researchers in order to

monitor the transformation of the "situated socio-material interactions" (Eriksen *et al*. 2014), observing their patterns (Karlgren & Ramberg 2012) and being awake (Akama 2015) to their intrinsic evolution.

The narratives on open-ended design also focus on a central *role of the participants* in "affecting" the design trajectories (Dolonen & Ludvigsen 2013) and in breaking the boundaries of the PD processes with their agency. In chapter 5, we already discussed the role of the participants and the relevance of enhancing their agency. In this passage, we discuss specifically how strengthening the voices of the participants is paramount in order to have an unrestrained and open-ended process. Indeed, the engagement of the participants is perceived as a "central challenge" that the practitioners should face carefully and step by step (Zoran, Shilkrot, Nanyakkara & Paradiso 2014; Modol & Chekanov 2014). There is a peculiar attention to enhance the voices of the people that will be affected by a process (Botero & Hyysalo 2013). The understanding of the trajectory of agency among "subjects and objects" (Light & Akama 2014), humans and materials, "institutional and non-institutional actors" (Nielsen, 2014) that are involved in a process can be a way to create the precondition of new agencies (Frauenberger *et al*. 2015). A key concept that is related to participants refers to the "alignment of views" (Stuedahl & Smørdal 2015) in order to ensure relational "continuity" (Light & Akama 2014) and mutual understanding during the open course of a process. In this way, is it possible to find in the literature (directly and indirectly) efforts toward a "long-term co-design engagement" of the participants (Botero and Hyysalo 2013) in order to enhance open-ended design.

In focusing on participants' engagement, the creation of collective forms of sense making and *mutual understanding* are perceived as a way to support participants in bringing their needs, wishes and experiences to a potentially open-ended design process. Several authors addressed the importance of working on *sense making* in order to reveal the socio-technical dynamics and its frictions (Dolonen & Ludvigsen 2013). As an example, Dolonen and Ludvigsen conceived design as an "intersubjective construction of meaning in situ" (2013: 248). It is accepted that a "sensitive" (Briggs & Thomas 2015) and comprehensive process can help to "enroll gradually*"* the participants (Modol & Chekanov 2014), disentangling the intertwinement of agencies involved in a process (Bratteteig & Verne 2012). In this scenario, the co-construction of mutual understanding is perceived as a way to support participation (Joshi & Bratteteig 2016) and collective decision making (Bratteteig & Verne 2012) in place. In particular, some works paid peculiar attention to "local" (Sabiescu, David, van Zyl & Cantoni 2014) and "situated" (Dolonen & Ludvigsen 2013) ideas of participation. A claim for novel sense-making practices to nourish the design processes, where the meanings can be collectively "shaped and shared" (Sanders & Stappers 2014) is presently emerging in PD.

In this scenario, a *trustful and sympathetic relation between participants and designers* is important in order to create a meaningful and trustworthy process, where the people feel free to express their needs and wishes, funneling it within the open progress of the design. In doing so, it emerges how the authors paid attention to creating feelings of closeness and *solidarity*, hindering the *us-them-dichotomy* between participants and designers (van Klaveren 2012). In particular, van Klaveren focused on these aspects by highlighting that participants and designers should *meet each other in the middle (*2012: 2), with the designers *spending time and being human* (*ibidem*: 5) in the context of the participants. With a similar perspective, Akama introduced the concept of *Ma* as an intellectual tool that stresses the importance of being sensitive in retaining the connections with the participants, since the relational reciprocity is experienced between us and others (Akama 2014). Most of the works highlighted that a deep respect and dialogue can help such open-ended design, fostering

negotiation of meanings (Hussain & Sanders 2012; Sabiescu *et al*. 2014), and challenging the stereotypes that we unconsciously use to orient ourselves in the world (Hussain & Sanders 2012). Designers, being as Ehn said "passionate participants" (Ehn 2014), have a paramount role in involving participants in a "fellow journeying" (Bratteteig & Verne 2012) where they can feel free to express themselves. Only in this way, it will be possible to let the participants take ownership of a process, bringing it to unexpected and open paths.

What is missing in contemporary PD?

The papers that we took into account in this chapter show that in PD there is a deep effort in understanding the dynamics related to open-ended design, and in this way we fragmented this topic by suggesting six narratives. These narratives can theoretically support PD researchers in conceptualizing open design processes, laying the foundation toward novel, ambitious, participatory trajectories in PD. In particular, these narratives display a PD effort toward the strengthening of the voices of the participants, acknowledging the design processes as situated, stratified and in *becoming with*. In this way, open-ended process can be conceived as a fascinating intellectual tool constituting a fundamental part of any emerging political agenda in PD, suggesting ways to conceive design processes that renew themselves continuously.

However, this vision seems to be too theoretical and difficult to be actionable within a process. Indeed, during our review a lack of attention to the power dynamics that can hinder the design processes and a scarcity of proposals of empirical strategies and resources to support the conduction of open-ended design processes emerged.

Some suggestions about the influence of *power dynamics* in open-ended design exist. These refer to a need for symmetry both between participants and between participants and designers (Dolonen & Ludvigsen 2013). It is accepted that avoiding tensions, "repairing misunderstanding" (Karlgren & Ramberg 2012), and hindering "domination" (Bratteteig & Verne 2012) can allow the participants to bring their contribution and sensitivity in the iterations of a process. These effort seems to be too few, and there is a need to continue with this kind of study, focusing on the empirical consequences of vitiated power dynamics.

Regarding the empirical strategies to support open-ended design processes, the reviewed papers addressed the central role of collective practices in order to democratically shape a process, advancing some empirical suggestions to support open-ended processes. The *collective practices*, are only theoretically described as things that influence the impermanence and the temporality of a process (Botero & Hyysalo 2013). Most of the papers that we analyzed paid particular attention to observing the "flow of actions" (Akama 2015) of the enacted practices, revealing in this way unexpected forms of agency before, during and after the design process. Collective practices precede, continue alongside and then go beyond the conclusion of a design process, showing social dynamics and illustrating – through real use – how the processes and their outcomes are re-interpreted and appropriated by participants (Simonsen & Hertzum 2012).

In this scenario, focused on theoretical aspects, only a small number of works suggested some *empirical strategies to support the enactment of open-ended processes*, presenting *resources and methods* that the authors of the selected papers adopted to pursue such conception of design. Some of the authors attempted to deconstruct the influence of language in design processes, creating communicative resources and figurations to support mutual understanding (Lindström & Ståhl 2015) and dialogue (Dolonen & Ludvigsen 2013) in order to hinder domination (Bratteteig & Verne 2012). Other authors suggested strategies to support

open-ended design suggested exploring the temporal layers of the processes (Hussain & Sanders 2012), using feedback loops (Modol & Chekanov 2014) and iterative approaches (Joshi & Bratteteig 2016). Reflexivity has also been mentioned as useful to monitor the hindering factors of the process (Joshi & Bratteteig 2016; Nielsen 2014; Sabiescu *et al*. 2014; van Klaveren 2012). All these strategies are connected by the purpose of accepting the open possibilities of design, including, for example, phenomena of reconfiguration, re-design and appropriation (Modol & Chekanov 2014).

Summarizing, there is an incredible wealth in understanding the design process as open ended, although from the empirical point of view, there is a little effort on the factors that hinder an open ended design process (e.g. vitiated power dynamics) and those that can support it (such as empirical strategies and techniques). In this scenario, these efforts appear limited, suggesting a need to fill this gap in order to support the enactment of open-ended design in PD.

Despite the aspects that should be enriched, it is our opinion that there is also a topic that is totally lacking in the PD literature on open ended design: its economic sustainability and feasibility. On the one hand PDers describe a design process as an evolving becoming with, which has no boundaries. On the other hand, the institutionalized design processes, where PD professionals are engaged, are subject to specific budget and time limits related to bureaucratic, economic and project management issues. Indeed, design processes, in which PD professionals work on, usually refer to funded projects defined by specific time spans that require a formal closure of the projects. That is empirically in sharp contrast with the purpose of embracing the *becoming with* of a design process.

Therefore, we argue for continuing to address techniques to support open-ended PD processes while the process itself can be considered as a *thing*, by itself open and contested, limited by institutional constraints, economic dimensions, and the working conditions of both the designers and the participants.

PARTICIPANTS GAINS: WHEN GOOD TECHNOLOGY AND MUTUAL LEARNING ARE NOT ENOUGH

As we stated, one important aspect of PD is to be able to improve the life of the people involved, what we can refer to as participant gains. Although such category was quite populated at the moment of reading and classifying abstracts, we noticed how the articles providing a deep understanding of this topic are limited. In fact, there seems to be a general narrative implying that *better technologies improve human life* without further specifications or deeper analysis. Examples of such narrative include the idea that technologized interaction might enable better social relations (Baharin, Viller & Rintel 2015; Carrington, Hurst & Kane 2014; Threatt *et al*. 2014) or a generalized improvement on the quality of work (Duarte *et al*. 2014; Ellis 2013; Garde & van der Voort 2014). The extreme side of such an assumption lays in articles in which the only gains that are properly discussed are those of the designers, epitomized by Lee, Samdanis & Gkiousou (2014), in which a discussion on the position of the participants is almost absent and in which the explicit goal is the improvement of product design. The discussion on methodological aspects of PD often suffer from the assumption that better technology equals better life, like in the work of Matthews, Gay & Doherty (2014), for whom developing empathy and mutual understanding becomes narratively secondary to the improvement of design and technology use of therapeutic systems for mental health care.

Remembering the argument by Davis (2012) of balancing the outcomes between technological and social aspects when discussing a PD project, we identified numerous studies which narrative focuses on *learning by the participants*, a theme that has traversed PD for some time (DiSalvo 2016). The general statement is that participation in a project *per se* allows the participants to learn something more about the world that surrounds them (Ashktorab & Vitak 2016; Slegers, Duysburgh & Hendriks 2014, 2015) or the technological landscape they inhabit (Coughlan *et al*. 2012), often through a process involving multiple feedbacks (Coles-Kemp, Angus & Stang 2013). That is reflected by an assumption that *participation is intrinsically beneficial* for people, even focusing only on the design phase without elucidating the details of possible long-term participation (Benton, Johnson, Ashwin, Brosnan & Grawemeyer 2012).

The limitation to the design phase hides the importance of the sustainability of outcomes (discussed by Frauenberger *et al*. 2015), extending beyond technology and the institutional setting of a process (Akama 2015), or connected to the establishment of new social roles and the relative positioning of participants (Aakjær & Brandt 2012). The works that we analyzed proposed interesting theoretical reflections which supported the embracing of the unexpected outcomes while co-designing. Most of them, when addressing the results of their processes, focused on artefacts and tangible outcomes at the expense of the possible social outcomes of PD processes. However, Davis discussed how the process' outcomes need to find a *balance between effectiveness and reflectiveness* (Davis 2012). Akama did the same, arguing that the impact of a process needs to be looked at *beyond its boundaries* (2015). Since, the results of a process can also be related to a *change of mindset among participants* (Halskov and Hansen 2015). In taking this perspective, there is an emerging effort in assessing the impact of a process by taking into account both its *tangible outcomes* and the human contribution of the

process itself (Eriksen *et al*. 2014; Hussain & Sanders 2012).

In fact, the most comprehensive study of participant gains, conducted by Bossen *et al.* (2016), clarifies how there are indeed impediments to what they refer to as "user gains". These cause *frustration by people* connected to a misalignment of aims between the designers and the participants as well as different conceptions of technologies among the two groups. That suggests that sometimes PD processes are, despite their claims, not in the direct interest of whom they are for. In fact, design practices can embed what Pedersen (2016) defined as a "logic of war" in the implementation of design processes, composed by tactical retrenchments and adjustments to reach the designer goals. Pedersen himself is arguing for a more *diplomatic and trustful approach*, focusing on a more open discussion of the *mutual interests of designers and participants*. A diplomatic approach has been stressed by Read *et al.* (2013), that argue for the need for transparency of the design process with the participants. In their paper, Read *et al.* present a self-critical tool named CHECk aiming at achieving transparency of the design process that enables PD practitioners and researchers to unearth the micropolitics that influence every design project. Mutual interests between designers and participants are what has helped the few scholars who have pointed to forms of long-term relationships with people, like Botero and Hyssalo (2013), who were involved directly by the people they were working with. Similarly, Ogonowski, Ley, Hess, Wan & Wulf (2013) have discussed how forms of *long-term relationship* should be rooted in an understanding of participants' direct interests that constitute the basis for trust and coordination among the designers and the social groups they work with (other examples of long-term relationship include Agid 2016; Kapuire, Winschiers-Theophilus & Blake 2015).

Looking at the outlined narratives on participants' gains, it is quite clear how the two main axis, (1) provide them with good technologies (2) through a process entailing learning, look insufficient to actually evaluate the political implications of PD, and that the considered articles can sometimes stress participants gains as functional to the designers gains. A wider discussion of the benefits for people, in terms of increased freedom, social collaboration, and affective rewards, needs to be included, not to mention the relationship with any sort of structural change in relation to political conflicts and struggles over the common. Nevertheless, especially when looking at the possibilities of building long-term and sustainable relationships, the few studies that have started questioning people-gains directly (Bossen, Dindler & Iversen 2012; Garde & van der Voort 2014), or proposing approaches more sensible to the direct interest of the participants (Ogonowski *et al*. 2013), constitute an initial baseline upon which people-interests can become more and more central.

What is missing in contemporary PD?

To discuss participant gains with a more political perspective, a radical evaluation of PD processes and projects is needed. In PDC 2016, Bratteteig & Wagner (2016) acknowledge the gap for evaluation in PD projects as "PD", stating that if the participants can recognize their voices in the design results, then the participation has been accomplished. We argue that, in order to reinvigorate a PD agenda, participation is not enough (Beck 2002). Therefore we argue for a *radical evaluation of PD processes and projects*, urgently calling for the analysis of short and long term results, opening up room for acknowledging *design failures*, supporting *follow-up projects* and *scaling-up PD successful transformative projects*. The survival and the self-sufficiency of a project after the designers left it and the recognition by the social groups involved of the transformation of their practices, are some of the preliminary indicators for a radical evaluation but more research and practice is needed.

DISCUSSION: WHAT WE HAVE LEARNT FROM CONTEMPORARY PD

The review we have conducted suggests to us the parts of existing PD that could point to a path to expand the inventory of conceptual and methodological tools available for scholars and activists engaged in creating working alternatives to mainstream digital technologies. We looked at PD as an academic and practice domain that, since its inception, focused on building alternatives to digital technologies driven by the need of management and capital. Looking at PD from this angle, we presented a quick recap of its history concluding with a presentation of a perspective part of contemporary PD that embraces the political agenda of "nourishing the common".

Following this agenda, we argued that the PD practitioners and researchers, as well as other scholars and activists interested in building technological alternatives, could fruitfully engage in: 1) discussing their work in terms of societal transformation – that is, to relate to general narratives on the relations between freedom and power, the poor and the rich, love and hate; 2) clarifying the relationship between the social groups they work with and their capacity to express and enact their agency at the social level, levering their freedom to pursue collective reproduction and love; 3) enacting an open ended design process, in which commonality itself is valued and loved; and 4) discussing the gains for the participants of a design project, showing how joy can be connected to the participation in a collective enterprise (Teli *et al*. 2016, 2017).

We want to start the discussion on what academics and practitioners can learn from PD history and contemporary practice referring to the content of one of the papers we read during our review, a short paper presented at PDC in 2012 by Frandsen & Petersen (2012), *From 'troublemakers' to problem solvers: designing with youths in a disadvantaged neighbourhood*. Two main reasons make this paper particularly interesting in framing our idea.

First, the authors discuss a case in which a group of people with supposedly weak resources – the youth in a peripheral neighborhood in Copenhagen – is involved in a PD process. This work addresses how the skills and life conditions of the participants were improved, in the light of their participation of a wide and engaged network of stakeholders. Second, and more important for us, the authors acknowledge how the design process brought about a small, although relevant, change and that only interventions on a larger scale on the socio-economic structural elements could bring about a bigger improvement for the participants.

These two premises are for us the starting point of the politics of PD today, pointing both to the strength of actual PD research in enacting localized change and to the weaknesses in failing to influence wider socio-economic dynamics. However, in this article, we refer to the UTOPIA project as a memento that this has not always been the case for PD (and for computing professionals in general, as shown by past organizations like Computer Professionals for Social Responsibility), where researchers were actually engaged in what was defined as an *offensive practice* to influence the development of the *capital–labor relationship*.

In this scenario, our general orientation toward nourishing the common became a practical question when looking at PD: How can PD engage in a renewed political research practice in the age of platform capitalism?

We think that our answer to this question, when referring to PD, can be a good way of engaging in conversations with other scholars and activists dealing with alternative digital technologies. We can engage in a renewed political research practice by looking at ways of nourishing the common, the ensemble of the material and symbolic elements that ties together human beings. This is, quoting Björgvinsson and colleagues, an effort of *future making* (Björgvinsson *et al.* 2012). In the next sections, we discuss what is already there in PD that can contribute to the proposed political agenda (9.1) and then, we present what we consider missing and necessary for a contemporary politically engaged scholarship in the domain of digital technologies, always taking PD as an example (9.2).

Contributions to politically engaged technologies: situating PD as a renewed political act

A number of the reviewed papers pointed to the need for long-term engagement of social groups, with the designer acting as one among others in the collective effort to affect future political development. As an example we can provide the case of the industrial-prison complex (Agid 2016) and the construction of stable alliances, as in the PD enactment of institutional opportunities like Living Labs (Björgvinsson, Ehn and Hillgren 2012; Ogonowski, Ley, Hess, Wan and Wulf 2013). In this context, it is not difficult to detect a similarity with the initial efforts of PD to directly connect to the agenda of the trade unions, joining who were, at the time, the relevant social actors challenging the way the *capital–labor relationship* was enacted. In the light of this, the problem becomes, then, to identify:

1. *which* social groups can be relevant allies for PD researchers *today*,

2. *how* PD researchers can join them in a renewed challenge to contemporary capitalism.

Our review suggests to us, in line with the premise of the life theory of value (Morini & Fumagalli 2010), that the arena of action is no longer only the workplace but the intermixing of unequal global relations that characterize our world (Harvey 2014). More specifically, the articles that we revised highlighted how effective can be for PD researchers to challenge the epistemology of design and the cultural aspects of design and society (Kapuire, Winschiers-Theophilus and Blake 2015) by working with: social groups challenging the normativity of contemporary societies (Björgvinsson, Ehn and Hillgren 2012), people with forms of impairments (Hendriks, Slegers & Duysburgh 2015), and human beings coming from non-Western contexts (Kapuire, Winschiers-Theophilus, Stanley, Chivuno-Kuria, Rodil, Katjivirue and Tjitendero 2014), or in various way considered peripheral. However, such attentions have *hidden the political economy* of contemporary capitalism, and we think that a combination of non-positivist, white-male, epistemologies and political economy is needed. This is particularly relevant when a small number of initiatives are already embarked on employing participatory design, addressing contemporary welfare issues and the life conditions of people who are financially struggling. In these cases, it is paramount to stimulate collective reflections, levering the design computational alternatives and promoting social cooperation that platform capitalism is dispossessing.

Contemporary PD already gives some hints on *how the relations with the prospective allies could be cultivated*. A paramount factor is to recognize the situatedness of design, acknowledging the need for reflexivity in the process of promoting the point of view of

participants, especially when engaging with agonistic public spaces. However, often fundamental elements are missing. Indeed, the political economy of research negatively influences the effort of designers in embracing the voices of participants. Devoting space to reflect on the situation of the designers, acknowledging their goals and constraints, even with funding, could be a first, preliminary step, in the construction of long-term relationships (Ogonowski, Ley, Hess, Wan and Wulf 2013) based on a diplomatic approach that leaves behind the *logic of war* (Pedersen 2016) that characterizes many design projects. That is particularly relevant when writing and reporting about specific projects. Indeed, the situatedness of the designers is often hidden in the language of academic writing, with a small number of cues visible in the acknowledgment section of publications (Traweek 1992).

Situating ourselves means, in the perspective we proposed, recognizing and making explicit the power and economic relations that stand behind any kind of design project (Agid 2016). For example, this book has been written independently from our funded research, not responding to any specific requirement of the funding agreements with the funding agencies (other than publishing as a pressure on all academics). This book was possible because we decided to engage in this writing adventure after we already satisfied the institutional constraints that we had on us and on our research. Similarly, as we are arguing for a choice of allies that is consistent with a strong political commitment, we are also aware that the relationship between the designer and the participants is often mediated by physical proximity, accessibility, and contingency factors that are not often accounted for in academic work, academic papers or project reports. In this scenario, it is our opinion that to nourish the common, designers should acknowledge their situation as singularities and subjectivities in what has been presented as a nexus of material and symbolic relations (Latour 2005).

Once a relation is established, *contemporary PD research offers plenty of concepts and ways to connect the work of researchers with the cultivation of an open ended, empowering design process*. As we highlighted in this work, from indexicality to entropy, from collective practice to mutual understanding, researchers have extensively explored and discussed how designers can account for their participation in ever-changing contexts, supporting the autonomy of participants by nourishing the common managing tensions, reconstructing misunderstandings, and hindering domination. Unfortunately, such an attention to the processes of PD is often disconnected from the *actual gains of the participants* deriving from taking part in a PD process as the hypothetical beneficiaries of a project's outcomes. The small amount of systematic research on participant gains (Bossen, Dindler and Inversen 2016) is a testimony of how PD researchers could engage in new research strategies that are rooted in political engagement, asking themselves how they could benefit their allies in developing forms of social collaboration that are more and more autonomous from capital accumulation.

What is missing in contemporary PD?

The previous section has articulated what we can learn from contemporary PD in re-imagining it. As our review also points to what is missing in order to answer our research question, this concluding section takes over: How can PD engage in a renewed political research practice in the age of platform capitalism?

On the basis of the four presented lenses, we have discussed what, in such an agenda, contemporary PD is already equipped for, and we have pointed to what is missing, the latter being the basis of the future agenda for the re-imagined political practice in PD that we are proposing (see Figure 3).

First of all, framing our proposal as PD in the era of platform capitalism, we point to

specific transformations of social life that characterize contemporary Western societies. Here, labor is precarious and carried out more and more frequently under freelance contracts; social relations get commodified, as well as our entire life is becoming a source of value for (mainly financial) capital; workers are "contractors" with poor, if not absent, labor rights, and the means of production has shifted to technology (e.g. AirBnB does not own hotels or apartments, Uber does not own cars, etc…). In this scenario, new sources of inequalities, and the capital-labor conflict is still alive and immersed in everyday life.

Therefore, if contemporary PD has pointed to agonism in society, we claim that the agonistic perspective should be augmented to include political economy, as today the economic conflict is pervasive, where platform corporations benefit from many of the things people do and contents they create (Fuchs 2013). What we propose is to articulate PD projects in such a way as to make explicit the tensions and conflicts that surround projects themselves, even economically. It is difficult to see a single PD project "solving" the issues at stake but these issues can be made visible, discussed, and considered while evaluating project results. This is where the lens of the common is particularly useful: as a project tries to nourish the common, it can concretely evaluate the condition of its existence as a project, resonate on how it is contributing to social collaboration and the common, and articulate its choices in relation to the tensions that are connected to the dispossession or nourishment of the common itself. That is why we call for a radical evaluation of PD projects: radical in its criteria, in discussing failure or success openly and clearly, and able to understand if a specific project has the capacity to scale up, to achieve socially transformative goals.

Figure 3: Articulation of the narratives and agenda emerged from the themes of the literature review

In our understanding, such radicalism is reflected in the way through which the social groups PD practitioners work with are described and conceptualized. On one side, the role of the trade unions, a potentially offensive force in the '70s, has changed historically and have become partners for PD projects less frequently. On the other side, the social groups PD practitioners work with are often framed as "excluded" (i.e. seniors, people with impairments, children, etc…) and PD projects are often conceived as a way to make the "weak" a little bit "less weak".

Within a radical perspective, PD practitioners could undo such stereotypical ontologies,

reverting the centrality of the Western able-bodied working, white and straight male as the normality, and look at these groups as actually challenging the status quo, as subjects who have political potential embedded in their situatedness (see, on the poor, Sciannamblo and Teli 2017). It is not only a matter of finding new groups, like social movements or renewed trade unions, that can have a social role similar to the one of the trade unions at the time of UTOPIA, it is also a matter of challenging the stereotypes and narratives that are considered as common sense in the media, in engineering and, often, among the funding agencies. Only in this way, PD practitioners can contribute to building their own autonomous agenda and not only be reactive to the agendas of other, more powerful, social actors.

Such effort, however, would not dismiss the need for an open ended design process that goes beyond the single project, that is able to scale from project to project, from context to context, from culture to culture, in a way that gives power to the voices of the people involved. It is not a matter of standardizing processes, but instead, of finding the common thread among different situations, locations, social groups, and contexts, in a way that allows for the construction of scaling processes. In this scenario, it is our opinion that the common as a concept, as well as the economic conditions of people and the search for long-term relationships and project sustainability could be the initial pointer toward an open-ended scalable practice. However, to make this kind of process work, it is necessary to clarify what the benefits are (what we called gains) for both the designers and the participants, acknowledging that they can sometimes be divergent if not conflicting. In particular, in the age of austerity, reduction of jobs and welfare, it is probably necessary to clarify what could be the benefit beyond mutual learning, in terms of short-medium term well-being. Indeed, a PD project nourishing the common should not only benefit the designer, with its publications, career achievements, or satisfaction of the funding agencies, but also the participants, often contributing for free. One of the ways in which this can be achieved is by building long-term relationships and alliances, between designers and social groups, in which the different interests align from time to time along the emerging needs of the actors and a shared perspective on what to expect from the future, on a renewed utopia.

CONCLUSION

In this book, we have looked at Participatory Design as a case of computing practice able to suggest paths forward for scholars and activists. In particular, we have looked at how a recent effort to update PD political agenda, is able to point to workable directions in the construction of technological alternatives to platform capitalism. Looking at these potential alternatives as oriented to nourishing the common, we have revised recent PD literature to understand how contemporary PD can be a relevant source for activists and researchers in other fields.

We also elaborated on what contemporary PD is missing, as we see these elements as the starting points for further research in PD and a dialogue with nearby approaches to computing. The need to understand better the political economy of design projects, to rethink alliances while deconstructing stereotypes and clarifying the social relations at play, as well as considering power dynamics and develop appropriate methodological tools, are all aspects of the conversations we see as potentially unfolding. These elements can, all together, contribute to a radical evaluation of computing projects, acknowledging failures, and looking at potential follow-up projects and mechanisms to address the issue of scale of projects. As the human population has the whole world in common, and digital technologies are crucial in governing it, we hope the conversations we are promoting could move beyond the specific academic fields, and this book is our first contribution to this agenda.

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Digital technologies have an increasing, often debated, role in our world: in this book we are concerned with the relation between technologies and the common, the ensemble of elements connecting human beings. Our motivation lies in the observation that the common is often dispossessed by platform capitalism. Can we, as scholars, help to identify and build digital technologies that nourish the common rather than dispossessing it?

To answer this question, we look at Participatory Design (PD) as an inspiring example for other scholarship. In the light of designing viable alternatives, in this book we review and discuss the actual status of PD research taking into account a reinvigorated political perspective. Our goal is to understand, from the most recent literature in PD, how such field can contribute to socio-technical alternatives to platform capitalism. We also point to the limitations of actual PD, in terms of missing elements when looking at the political agenda on nourishing the common that we propose. More specifically, we look at PD literature trying to answer the following research question: "how could PD research contribute to a renewed political research practice in the age of platform capitalism?".

To answer this question, we engaged in a narrative literature review of the last years of activity in the field. This literature review is grounded on the framework, developed by us as a contribution to PD itself, of a Participatory Design promoting commoning practices, or nourishing the common, the ensemble of the material and symbolic elements tying together human beings. Such framework identifies four practical strategies for scholars, professionals, and activists in the field of PD interested in building a contemporary activist agenda: 1) to identify an arena of action that is potentially socially transformative; 2) to clarify how the social groups involved in a specific technological process can connect to commoning; 3) to promote and enact an open ended design process that is facilitated but not strongly lead by the designers themselves; and 4) to discuss and evaluate how people participating in a design project see their material conditions changed by the project itself (four themes we referred to, in our review, with the four labels Transformative; Agency; Open Ended; Gains).

Starting from our four strategies framework we approached the literature review, searching for those works that adhere to one or more strategies. We complete the review with a discussion, based on the reviewed literature, on the strategies that can dialogue with other researchers engaging in an activist agenda aimed at social transformations that supports nourishing the common.