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Cork, 02.11.2024

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LABOUR CONFLICTS IN THE DIGITAL AGE

Understanding Work and Employment Relations

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LABOUR CONFLICTS IN THE DIGITAL AGE

A Comparative Perspective

Donatella della Porta, Riccardo Emilio Chesta,
and Lorenzo Cini



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Series Editors' Preface

We are very pleased to introduce the next volume in this book series, Understanding Work and Employment Relations. Following on from Cecile Guillaume's monograph *Organizing Women: Gender Inequalities in French and British Trade Unions*, *Labour Conflicts in the Digital Age* by Donatella della Porta, Riccardo Emilio Chesta, and Lorenzo Cini is the second text to be published in the series.

This series has been designed as a space for both monographs and edited volumes to highlight the latest research and commentary in the academic field of employment relations. The series is associated with the British Universities Industrial Relations Association (BUIRA), which marked 70 years of existence in 2020. The series seeks to draw on the expertise of the membership of BUIRA and contributions to its annual conference, as well as employment relations academics from around the world. Employment relations is a mature field of study and continues to be of relevance to academic and practitioner audiences alike. BUIRA recognizes the broad nature of the field of employment relations, and acknowledges that the field of study is constantly developing and evolving. BUIRA regards employment relations to be the study of the relation, control, and governance of work and the employment relationship. It is the study of rules (both formal and informal) regarding job regulation and the 'reward-effort bargain'. These issues remain relevant today, in an era where the standard employment relationship has become increasingly fragmented due to employers' pursuit of labour flexibility, and we see the continued expansion of the gig or platform economy. Employment relations (and adjacent research areas including human resource management and the sociology of work) is taught widely in universities around the world, most commonly in business and management schools and departments. The field of study is multidisciplinary, encompassing law, politics, history, geography, sociology, and economics. Human Resource Management (HRM) has a tendency to focus uncritically on management objectives, without exploring issues of work and employment in their wider socio-economic context, and has its disciplinary roots in psychology, whereas employment relations retains a strong critical social science tradition. As scholars in this area we feel that

there is a need for regular, up-to-date, research-focused books that reflect current work in the field and go further than standard introductory texts. Through this book series, we aim to take an inter-disciplinary approach to understanding work and employment relations, and we welcome proposals from academics across this range of disciplines. We also welcome ideas and proposals from a broad range of international and comparative perspectives in order to reflect the increasingly diverse and internationalized nature of the field both in the UK and globally.

This monograph analyses worker mobilization and labour conflicts in the platform economy. The authors draw on both employment relations and social movement studies to make a strong contribution to the burgeoning literature on the platform economy, placing the agency of labour at the centre of their analysis. The book provides an in-depth and comparative analysis of digital worker mobilization, focusing on food-delivery couriers and Amazon drivers in Italy, and Amazon Mechanical Turk workers across the globe. The authors have developed an excellent text which makes a strong contribution to radical industrial relations through providing new empirical and theoretical knowledge on the new forms of worker mobilization and organizing strategies in the platform economy. This book constitutes an important and timely contribution to the ongoing debates on the impact of technology on the world of work.

We hope you enjoy reading this book. If you would like to discuss a proposal of your own, then email the series editors. We look forward to hearing from you.

Andy Hodder and Stephen Mustchin

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Class and Contention: Social Movement Studies and Labour Studies

Class and contention: an introduction

The structural transformations driven by the process of digitalization pose new questions regarding its effects on work and worker agency. Looking at the relationship between digital technologies and work through the lens of contentious politics allows for an understanding of class development in the new digital landscape. In particular, the emergence of a new digital working class and its relationship with other classes must be investigated throughout the whole cycle of the social transformation that gave rise to precarious work.

New forms of worker mobilization have attempted to tackle the problem of the social conditions of precariousness. Our research aims at understanding how the rise of digital technologies has reshaped the concept of work, transformed the social identities attached to it, and thus posed new challenges to social regulation. In this sense, we address the new configuration of individual and collective rights linked to the deregulation of work under neoliberalism and the related debate on the ever-growing ‘precariat’ (Standing, 2011) as a potential new class of workers experiencing the social insecurity linked to neoliberal deregulation in terms of labour fragmentation and contractual instability. Nowadays, this debate on the precariat as a new potential class extends to its digital frontiers, as terms like the *cybertariat* (Huws, 2009), the *info-proletariat* (Antunes, 2012, and the *virtual class* (Casilli, 2020) are coined to refer to a new class of working poor in cyberspace, aware of the complex intertwining between working conditions offline and online.

The debate is thus updating classic questions regarding the centrality of work in society, and how relations between class and labour have changed

with the advent of the process of digitalization. This process seems to have strengthened the dynamics of capital accumulation globally. The digitally led accumulation process has, indeed, further expanded the exploitation of labour in *intension*, as a result of the power of new technologies of automation and datafication over things, artefacts, and humans, as well as in *extension*, given the expansion of new areas of value accumulation in the virtual and physical world. Research on the effects on contemporary work of these transformations should, therefore, be twofold: examining the pressures from the top, such as the structure of the political economy, and those from the bottom, such as labour bargaining and mobilization power.

With regard to the political economy structure, while the mobility of capital increases the competition to attract foreign direct investment, new international divisions of digital labour are constantly reshaping the coordination of the chains of global production, generating shifts in competition between companies and the workforce, with countries of the semi-peripheral and peripheral economies playing new roles in global competition. The interrelation between new forms of value accumulation through outsourcing as the basis of the new global value chains, even in highly qualified sectors (Fuchs, 2014), is particularly visible in the relationship between Indian software developers and US digital companies in Silicon Valley. The new factories established in the BRIC (Brazil, Russia, India and China) countries by Japanese and German car multinationals testify to the rise of a new, skilled working class in these regions of the world (Jürgens and Krzywdzinski, 2016).

In countries of the peripheries and semi-peripheries, these dynamics then trigger working-class mobilizations, which in turn erode the rates of profit for multinational companies, thus pushing capital into strategic geographical relocation (Silver, 2014). Constantly reshaped by processes of workforce recomposition and conflict, new forms of working-class mobilization are in fact becoming ever more common in the Global South. From South African mines, to Indian car factories and Chinese shoe producers, new types of industrial workers are mobilizing collectively and building new forms of unionization, and this notwithstanding the high costs of mobilization that result from the lack of workers' rights and the high levels of State repression (Ness, 2015).

As technological innovations seem to create various forms of (often precarious) digital workers, a central question in the reflections on recent capitalist transformation, which we will address in this volume, refers to the specific forms of collective mobilizations of workers in the digital platform economy. In addressing this question, we contend here that a more effective integration between the approaches adopted by social movement studies and labour studies is necessary. Indeed, such a sharp disciplinary distinction does not do justice of the interwoven character that social mobilizations

often adopt in their development. A separation between the two fields of studies seems especially untenable today given the return and proliferation of struggles on labour issues, where bottom-up forms of worker organizing and social movement types of action have been mixed, giving rise to a new array of labour actors and mobilizations (Mathers et al, 2018). In short, now is the right time to spur on a scholarly prolific discussion between scholars of social movement and labour studies (Cini, 2021).

There are many reasons why social movement studies and the studies of trade unions and industrial action have rarely interacted in the past (for a valuable exception, see Kelly, 1998). One of these is the fact that the former has focused almost exclusively on ‘new social movements’, considering the labour movement as ‘old’ and increasingly marginal, especially following the decline of industrial conflicts in Western countries from the 1970s onwards. While initially some attention was paid to the new middle classes as the central actors of social movements, later on class as an explanatory dimension was altogether dismissed (Hetland and Goodwin, 2013).

Within labour studies, on the other hand, a parallel and complementary reason is its focus on traditional forms of industrial action, considering labour conflict as ultimately institutionalized and the power of organized labour as increasingly weakened (Crouch, 2003). In fact, research viewed traditional unions as actors in collective bargaining, in some cases within three-party negotiations involving the state in neocorporatist agreements of various sorts (Frege and Kelly, 2004). Considering labour conflicts as institutionalized (Kaufman, 2010), labour studies have converged on three central tenets:

1. Trade unions are seen as the main actors in strikes. 2. Coordinated trade union action is juxtaposed with ‘unorganised’ or spontaneous mobilisations. 3. The focus is on the workplace as locus of conflict. ... Trade unions had been recognised by employers and the state in much of Western Europe and North America and collective bargaining came to be seen as the preferred route for a more assimilated and moderate version of labour conflict. (Nowak, 2019: 35)

Indeed, if social movement literature has traditionally ignored mobilization dynamics in the world of work (Hetland and Goodwin, 2013; della Porta, 2015), industrial relations scholarship has for too long adopted a narrow institutionalist agenda, focused on collective bargaining, the workplace, and traditional trade unionism (Atzeni, 2021; Nowak, 2021).

More generally, in both fields, attention to class and capitalism has been steadily declining (Silver and Karataşlı, 2016), as have other cognate fields of research, such as those examining political parties and political participation. At best, classes have been identified with social stratification, and have been addressed as statistical aggregates with no clear links to class identity,

in addition to being separated from the analysis of the workplace and of conflicts (Vogt, 2018). On the other hand, from the 1970s onwards, the Marxist research tradition has been subjected to a critical revision, leading to a progressive and steady separation of its core theoretical tenets from the empirical analysis of the transformations of late capitalism (Streeck, 2014). In social movement studies, attention has moved from considering the new middle classes as the central actors of social movements to dismissing class as an explanatory dimension altogether (Hetland and Goodwin, 2013). Industrial relations literature has, to a large extent, tended to explore the institutional and regulatory aspects of industrial conflicts rather than their social and material dynamics (Atzeni, 2021). This has led, more recently, to a significant scholarly strand that focuses on aspects related to the economic efficiency of business companies and the related management of human resources (Kaufman, 2010).

These respective limitations of the two fields in question have certainly delayed the study of labour conflicts in the new digital world of work, which are characterized by social movement-like types of processes, and therefore may have limited the adoption of innovative approaches that are able to merge insights from social movement research and industrial relations. This lack of dialogue notwithstanding, there have been attempts by social movement scholars to look at systemic transformations, within and without new social movement theories, as well as to import concepts and hypotheses from resource mobilization theories in social movement studies (McCarthy and Zald, 1977) into the analysis of unions and strikes (Kelly, 1998). In addition, in very recent times, a revival of attention to emerging workers' protest in various parts of the world in social movement studies and labour studies has created opportunities for scholars in different fields to interact.

Building upon these attempts, we aim in this volume to connect the fields of social movement studies and industrial relations in addressing the issue of worker resistance to capitalist transformations. As the advent of platform economy has rapidly diversified the landscape of collective association and representation, an increasing number of studies on the platform economy has pointed at the high organizational variation in the associational power of platform workers, associated with the presence of informal groups of platform workers and worker-led platform cooperatives. This novel picture calls for systematic analyzing of worker struggles and bottom-up processes of collective (identity) formation also beyond established trade unions (Joyce et al, 2020; Basualdo et al, 2021). Engaging in this endeavour, our study examines several episodes of labour mobilization that have taken place over the past decade in specific sectors of the digital-based platform economy. While the empirical analysis focuses on the work on-demand via apps, comparing especially food-delivery workers with those involved

in warehouse and last-mile logistics, we extend the comparison through secondary analysis on so-called crowdworkers, paying particular attention to online micro workers such as Amazon Mechanical Turk.

Bridging approaches in industrial relations and social movement studies

For the analysis of this new world of work, our theoretical model builds in particular upon radical approaches in industrial relations with relational approaches in social movement studies. We develop these assumptions in relation to the digital world of work and the challenges that these workers face when taking collective action by presenting theoretical reflections and empirical knowledge on the new forms of worker mobilization and organizing strategies in the platform economy and digital labour.

In industrial relations, the radical frame of reference sees the tensions in the employment relationship as symptomatic of structural contradictions underlying capitalism and considers non-institutional actors, such as social movements and rank-and-file labour advocacy organizations, as new sources of both worker identity and action (Tapia et al, 2015; see also Gasparri, 2017). In this sense, workers have agentic capacity – all the more so in moments of crisis when their resistance, expressed through social movements, can challenge existing economic arrangements and lead to their transformation (Heery, 2016).

The literature on industrial relations has traditionally encompassed several distinct approaches, each reflecting a particular perspective on the nature of employment relations (Kaufman, 2010). In a seminal study conceptualizing these approaches, Alan Fox (1966) focused on ‘frames of reference’, which he defined as ‘packages of values and assumptions pertaining to the interests of parties to the employment relationship – that is, the needs, wants, and aspirations of employees, employers, and the state – and the degree to which these interests are compatible’ (Budd and Bhawe, 2008: 93). Consequently, the core theoretical frames are identified with underlying assumptions about the interests of workers and employers, which give rise to formal ideologies, normative positions for evaluating the present and shaping the future. Additionally, they generate models for the employment relationship, offering explanations relating to institutions, behaviour, and outcomes, which can be weighed and tested through empirical research (Heery, 2016).

In this analysis, these frames are rooted in two key dimensions: the interests of the actors to the employment relationship and the degree to which these interests are compatible. The key questions are, therefore: what are the interests of employers and employees, and are these interests compatible or in conflict? Depending on the responses to these questions, three approaches are singled out – unitarist, pluralist, and radical – which differ

Table 1.1 Frames of reference in industrial relations

	Employment relationship	Form of worker representation	Research implications
Unitary	Based on trust and harmony; managed conflict	Individual voice; employee participation	Focus on firm performance, employee satisfaction
Pluralist	Divergent interests; need for regulation to solve conflict	Institutional arrangements: trade unions, collective bargaining	Role of trade unions and of institutions in collective bargaining to resolve conflict
Radical	Underlying structural inequality; struggle for power and control	Militant unions; extra-institutional: social movements	Macro perspective of broader forces to fight for societal change

Source: Adapted from [Tapia et al, 2015](#): 160

in their views on the character of employment relations (see [Table 1.1](#)). Notably, the unitarist frame assumes a common purpose and shared goals between employers and workers, where conflict is pathological. The pluralist frame assumes instead competing interests and tension between the two parties: potential conflict has to be organized by effective institutions, for the benefit of all. Finally, the radical frame assumes that the employment relationship is symptomatic of structural contradictions underlying capitalism, and argues for the resistance of workers against the resulting exploitation and coercion ([Gasparri, 2017](#)).

Furthermore, each frame attributes primary agentic capacity to a different strategic actor within the system of employment relations. For unitarists, the critical actor is the employer. Pluralists tend to accord agentic priority to the state, which has the capacity to regulate the employment relationship and, through law and other levers of policy, establish an enduring balance between the interests of workers and employers. For radical scholars, workers have the main agentic capacity, normally expressed through social movements, community organizations, rank-and-file unions, and other associations of civil society; conversely, little value is conferred to traditional trade unions and to the institutional channels of conflict resolution ([Heery, 2016](#)). The latter position is the theoretical tradition with which we have aligned ourselves in order to make sense of the capitalist transformations accompanying the rise of digital labour and understand the potential for worker resistance.

For their part, as we will argue in what follows, relational approaches in social movement studies can usefully complement this perspective by paying attention to how collective action is mobilized and the consequences of such actions. As noted, social movement studies have addressed grievances, claims, and frames, but rarely have they investigated the structural bases of

these elements. Only recently have neo-Marxist approaches re-emerged in the field, focusing especially on the social bases of protest (della Porta, 2017). Indeed, building on a number of attempts to bring an analysis of capitalism back into social movement studies, we have investigated how certain specific transformations, triggered by the processes of digitalization and platformization, have affected the forms of labour conflicts, including repertoires of action, organizational forms, and collective framing. In particular, we have considered the emergent nature of contention as an action itself, producing organizational transformations as well as collective identities.

In considering the agency of labour, we have to look at strategic choices as embedded in normative orientation with particular attention to how, given certain structurally based grievances, opposition and contestation are mobilized. While social movement studies have traditionally considered resources as preconditions for mobilization and rooted framing in traditions (della Porta and Diani, 2020), in our analysis we have addressed the mobilization of emerging groups, characterized by low organization and stigmatized identities. For these types of actors, we suggest that conflicts follow specific dynamics, as organizational resources as well as collective identities develop in action. In general, it can be said that eventful protests trigger processes of organizational aggregation and identity framing, especially among 'poor people movements' (Piven and Cloward, 1977), but also in the mobilization of new working groups (Crouch and Pizzorno, 1978), and at the beginning of protest cycles (Tarrow, 1989). In particular, we aim at understanding mobilizations that have arisen in working circumstances characterized by low levels of traditional union organization and by high levels of technological innovation and control. In doing so, we will look at how new instruments of capitalist surveillance over labour (Zuboff, 2019) are indeed challenged by various categories of platform workers, capable of forging and deploying new forms of collective action, both in the workplace and outside of it. In this sense, our empirical findings point to the occurrence of various types of collective action and the emergence of new forms of organizing and identities among digital workers.

In this introduction, and in the chapters that follow, three approaches on new social movements, resource mobilization, and identity building will be presented in turn. We will discuss the most recent theoretical frameworks that have been put forward, and their contribution to the understanding of the current revival of reflections on class and capitalism, as well as the mobilization of labour, will be assessed. In particular, we will look at how they could contribute to making sense of a new political juncture where digital technological change has been disrupting the traditional forms of work organization and the related employment relations, while new struggles for labour recognition have been emerging with new collective identity processes and forms of worker mobilization.

Class and capitalism: beyond the new social movement approach

Scholars belonging to what has long been defined as the European tradition of social movements have consistently pointed to certain significant transformations in societal systems, for which new professionals were the new conflictual classes that formed part of the so-called new social movements. In particular, the works of scholars like Alberto Melucci (1996) and Alain Touraine (1987) were undoubtedly useful in singling out some of the challenges for social movements in what came to be known as ‘programmed’ (or post-industrial) societies.

In Alain Touraine’s macro-sociological model, programmed societies followed the previously dominant agrarian, mercantile, and industrial social formations, each of which was characterized by specific class conflicts. The programmed society – which he focused on in his research on new social movements – is characterized by the ‘production of symbolic goods which model or transform our representation of human nature and the external world’ (Touraine, 1987: 774). As the control of information constitutes the principal source of social power, conflicts are expected to move from the workplace to areas such as research and development, the processing of information, biomedical and technical sciences, and the mass media. The central actors in social conflict are therefore no longer classes linked to industrial production, but rather groups that fight from opposing perspectives about the use and destination of cognitive and symbolic resources.

In a similar vein, Alberto Melucci (1996) emphasized how, in the highly differentiated systems of contemporary societies, investment in the creation of individual autonomous centres of action conflicts with the need for closer integration, with increasing control over the very motives for human action. In his view, new social movements attempt to oppose the colonization of social life by the state and the market, reclaiming the individual’s identity, and the right to determine his or her private and affective life, against the omnipresent and comprehensive intrusion of the system. These movements do not, in Melucci’s view, limit themselves to seeking material gain, but rather challenge the widespread notions of politics and of society. Such new actors, rather than demanding an increase in state intervention, resist the expansion of the political-administrative intervention in daily life and defend personal autonomy. From this perspective, empirical research addressed the emergence of new cleavages outside the factories, the forging of new collective identities, the resistance to the hierarchical work of society, and the market.

Research in history and sociology has repeatedly indicated the importance of labour struggles in the development of civil, political, and social rights

(Barker and Lavalette, 2015; della Porta, 2015 for a synopsis). The working class had been a central actor in the conflicts of industrial society given not only its size, but also structural factors, such as the spatial-technical features of the large Fordist factory, with workers performing similar tasks, as well as their concentration in urban areas, both of which facilitated dense networks in which a class identity could develop (Thompson, 1963; Tilly, 1978; Fantasia, 1988). While the mix of Fordism and Keynesianism that had characterized the specific capitalist formation were still dominant, at least in the part of the world that mainstream research on social movements tended to address, as Cini et al (2017) have noted, changes in the organization of industrial work, with new automated technologies, the decentralization of production and the growth of an informal economy, occurred at a time when urban restructuring was weakening the very bases of the industrial conflict. These transformations had repercussions in terms of social structure, with trends including the decline in the importance of the industrial sector and the expansion of administrative and service occupations, both in the private and in the public sectors (Castells, 1996). They also led to an increase in unemployment, poverty, and migration.

Considering the class cleavage as pacified – given the neocorporatist assets as well as the declining capacity of class belonging to explain political behaviour – certain social movement scholars pointed to the post-industrial and post-materialist character of the new movements they focused upon. Indeed, with a clear focus on so-called Western democracies, they have addressed the ways in which these long-term transformations influenced emerging social movement forms. As della Porta and Diani (2020: 39) summarized:

These processes have weakened the structural preconditions which had facilitated the emergence of a class cleavage, particularly in the working-class model of collective action. Overall, the size of social groups which lack full access to citizenship and its entitlements has grown, whether because they are migrants (legal or illegal), marginals, in the strict sense of the term, or because they are employed in the hidden economy, or engaged in low-paid work. ... The multiplication of roles and professions and of the related stratifications, and the (re)emergence of ethnicity or gender-based lines of fragmentation within socio-economic groups have made it more difficult to identify specific social categories. The greater frequency of job changes and the weaker links with territorial communities has also made relationships among those who once shared the same structural condition more unstable and fragmentary. Work seems to be gradually losing its collective nature. ... It is more difficult to deduct actors' interests from their structural position, and to organize their protection on that basis.

These theorizations were to some extent useful in illuminating some characteristics of contentious politics in a specific area of the world during the particular period of the expansion of the welfare state (Therborn, 2013). They were, however, considered as biased in their singling out of some characteristics that had accompanied the onset of different ‘old’ movements (such as their focus on identity building) as typical for conflicts in the new social formation (Calhoun, 1993). Moreover, they required adaptation to the specific trajectories of neoliberal transformations (Baccaro and Howell, 2017) in order to explain protests in parts of the world that could not be more different (della Porta, 2015). While initially defined as a moderate version of liberalism, which – as in the theorization of the Vienna school at the beginning of the 20th century – recognized the need for state regulation, as since the experiments with the free market in Pinochet’s Chile, neoliberalism has come to indicate policies characterized by privatization, deregulation, and market liberalization (eventually cum-austerity) (Boas and Gans-Morse, 2009), actively promoted by transnational think tanks (Bockman, 2007). As Harvey (2005: 2) wrote:

Neoliberalism is in the first instance a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterised by strong private property rights, free markets, and free trade. The role of the state is to create and preserve an institutional framework appropriate to such practices.

With different emphases in different areas of policies and in different countries, neoliberal relations between the state and the market have been characterized by privatization, deregulation, and liberalization.

The social movements of the 2000s have, in fact, developed within a world system dominated by a consolidated hegemony of neoliberalism. The specific model of the programmed society, which was addressed by the new social movement scholars, referred to a specific phase of expansion of advanced capitalism, however, it no longer seemed to describe the contemporary neoliberal developments in capitalism (leaving aside its focus on core Western capitalist countries). There are, however, some lessons from the ways in which they examined the interaction between general societal models and social movements that are worth keeping in mind.

First and foremost, in social movement studies, criticisms of orthodox Marxist approaches went beyond the observation of a declining role of labour movements, which were considered as having been either pacified or defeated, criticizing its structuralist foundations instead. In fact:

the deterministic element of the Marxist tradition – the conviction that the evolution of social and political conflicts was conditioned largely

by the level of development of productive forces and by the dynamic of class relations – was rejected, as was the tendency, particularly strong among orthodox Marxists, to deny the multiplicity of concerns and conflicts within real movements, and to construct, in preference, outlandish images of movements as homogeneous actors with a high level of strategic ability. (della Porta and Diani, 2020: 7)

The study of collective action went beyond the analysis of the position in the world of production: collective action was defined, in fact, as the ‘behaviour of an actor guided by cultural orientations and set within social relations defined by an unequal connection with the social control of these orientations’ (Touraine, 1981: 61). Social movements were thus defined as a driving force in societal developments, so much so that ‘the sociology of social movements cannot be separated from a representation of society as a system of social forces competing for control of a cultural field’ (1981: 61).

Criticizing the assumption that the working class is no longer a central actor in the development of society, authors within the (post)-Marxist tradition have, however, revisited the works of Touraine, and are particularly interested in reviving his theory on the centrality of the struggles of two main classes fighting over historicity, which forms a central stake in the conflict, as well as his attention to the development of collective identities (Barker et al, 2013; Cox and Nilson, 2014). While New Social Movement (NSM) scholars were discussing a specific ‘expansive’ phase of advanced capitalism, they usefully drew attention to the structural determinants of conflicts – the new professionals and the socio-cultural middle classes – while at the same time also highlighting the importance of agency, such as in the innovative action forms and horizontal modes of organizing. In the emerging society, variously defined as ‘post-industrial’, ‘post-Fordist’, ‘technocratic’, or ‘programmed’, the (still valid) assumption is that ‘[s]ocial movements are not a marginal rejection of order, they are the central forces fighting one against the other to control the production of society by itself and the action of classes for the shaping of historicity’ (Touraine, 1981: 29). In this sense, they argued against the structuralist interpretation of Marxism, which neo- or post-Marxist approaches have contributed in part to overcoming, emphasizing instead the role of (dominated) social groups’ agency in the capitalist conflict (see Cini et al, 2017), without, however, investing much in the specific development of collective identities and subjectivities.

Revisiting this literature leads to a reflection on the extent to which neoliberalism transformed the characteristics of the programmed society that these scholars had addressed. In particular, we might expect that some of the elements the NSM approaches pointed towards still remain relevant in the current mobilizations. These include the importance of knowledge control in the face of the decline in material ownership of the means of

production, or the rejection of a hierarchical conception of the public in the welfare states in favour of a definition of the ‘commons’ (or ‘the common’) (Hardt and Negri, 2009). The work of Melucci and Touraine was influential especially in their revisitation of Antonio Gramsci’s visions of counter-hegemonic actors applied to anti-austerity movements in various parts of the globe (see Cox and Nilson, 2014). In particular, knowledge emerges as particularly important in the development of discourses of resistance around the recognition of radical needs that start with the overcoming of the dominant common sense (Barker and Cox, 2002).

What existing Marxist approaches tend to overlook, on the other hand, is the ways in which political opportunities mediate the socio-economic effects as well as the processes of resource mobilization, which is what social movement studies have mainly focused upon. Research on anti-austerity protests indicates that both a Marxist analysis of structural conditions and the attention paid by social movement studies to the mobilization of resources and opportunities must be combined in order to understand the extent and forms of expression of discontent with neoliberalism (Caruso and Cini, 2020). The effects of the transformations in the relationships between the economy and the state with the development of neoliberal policies are indeed visible in the social bases of contentious politics in recent times. Not only are conflicts on socio-economic issues of increasing relevance (Hutter, 2014), but the anti-austerity protests have also seen the mobilization of variable coalitions of social groups, which have been hard hit by capitalist restructuring (della Porta, 2015). While some research had indicated that the social bases of left-wing protest has shifted from the industrial working class, in the case of the labour movement, to the new middle classes, in the case of NSMs, anti-austerity protests directed attention back to the mobilization of those who were suffering most from neoliberal globalization.

From the point of view of a labour movement scholar, John Kelly (1998) strongly criticized the NSM theory, which he saw as supporting arguments that viewed the end of labour as an emancipatory force. As he noted, the up-and-down swings of labour protest are related to long waves of economic transformations and to ‘regular and periodic labour-capital relations that lay the foundations for the intervening periods of relative stability’ (Kelly, 1998: 86).

Rather than disappearing (either by being co-opted or by being defeated), the labour movement is expected to adapt to these changes, while also resisting them. In this sense, the expectation of an unavoidable decline of labour and its political expression, as well as an exclusive focus on NSMs, is criticized, when he states that: class identification at the workplace was reinforced by external circumstances such as occupational communities and class-segregation of housing areas. But unionism and collective action became increasingly common among residually-dispersed white-collar

workers, so these external factors appear neither necessary nor sufficient for the appearance of ‘class subjects’ (1998: 121). By contrast, the only thing that may, potentially, be able to confront the ill-fated effects of neoliberal globalization and spur on the creative processes of a formation of class consciousness is the combination of workplace and community struggles, forming a cross-class coalition of oppressed groups. In this respect, some recent Industrial Relations (IR) studies have stressed the role played by the community, both ethnic and local, as an important source of collective identification for individuals such as migrants or precarious workers, struggling for better conditions in hostile social and political circumstances (Alberti and Però, 2018). This more radical research tradition points to the importance of (social or ethnic) communities in processes of collective identity formation, which have rehabilitated a much-needed change in IR studies, towards a bottom-up and self-organizing perspective (Rizzo and Atzeni, 2020).

More generally, cross-class coalitions would now seem to be the predominant form for contesting neoliberal capitalism. For instance, the people who protested against austerity policies in several regions across the world, which consisted of various coalitions of different classes and groups, described themselves as 99 per cent of the population, aiming to antagonize a political struggle against the 1 per cent of the capitalist business elite at the global level (della Porta, 2015). As a result, any analysis of work nowadays should go beyond the ‘comfort zone’ represented by trade unionism and be capable of understanding changes in the conditions and issues of the working classes, by linking work to broader political economy dynamics and the workplace to the community. In mainstream IR literature, the union is taken to be the unquestioned form of worker organization, the *sine qua non* and the necessary starting point of the analysis, almost to the point of fetishization (Atzeni, 2021). However, by adhering to this focus, these studies have failed to consider a whole range of material conditions, factors, and circumstances that mediate and shape the social processes driving worker organizing. The focus is limited, insofar as it disconnects the case studied from the institutional context and the broader political dimension (Atzeni and Grigera, 2019). The dynamics of social movement formation are in fact magmatic real-world processes that can, however, be transformed into more generalized conflicts only if understood and organized beyond the traditional focus on trade unions and on the workplace.

The collective organization of labour: beyond resource mobilization

It is in this vein, with the aim of addressing the new forms of worker mobilization arising from both within and outside of the workplace that

some scholars in industrial relations research came to import the resource mobilization approach from social movement studies. In this approach, ‘the focus on mobilization was explicitly intended to move debate away from the descriptive and institutional focus of industrial relations into a realm that gave greater conceptual and theoretical clarity to agency’ (Kelly, 1998: 15).

It was John Kelly’s (1998: 38) mobilization approach that particularly influenced industrial relations. According to him:

Mobilization theory constitutes a significant shift in the focus of industrial relations research. At its heart is the fundamental question of how individuals are transformed into collective actors willing and able to create and sustain collective organization and engage in collective action against their employers. ... It redirects our attention away from bargaining structures and institutions and towards the social processes of industrial relations.

In this version of the resource mobilization approach, injustice acquires a central role, as a perception of a social wrong that departs from ‘widely shared social values’ to become a potential source of mobilization. Kelly’s mobilization theory identifies the conditions under which ‘individuals are transformed into collective actors willing and able to create and sustain collective organization and engage in collective action against their employer’ (1998: 38).

According to this approach, grievances are not enough for workers to act collectively. Leaders are considered as playing a fundamental role in mobilizing a sense of injustice:

In the process of moving towards the development and articulation of collective interests, those dissatisfactions must be framed as illegitimate and attributed to an agentic other party – usually, in industrial relations, management – and then put forward as a set of demands. Leaders are essential in that process. ... Mobilization can only then occur when a collective group (say, workers) perceive an injustice which is framed as such and attributed to another group, say managers. (Holgate et al, 2018: 603)

In terms of political opportunities and constraints, this approach points at ‘the complex dialectical interplay between structure and agency – or what we might term objective conditioning and subjective influencing factors both internal and external to the workplace and union which can shape the emergence and dynamics of collective action’ (Darlington, 2018: 620).

In this sense, mobilization theory should, in fact, allow for an analysis of the potential for labour movements to adapt to the transformations in the shift

from Fordism, with the mass production of standardized goods by low-skilled workers on the assembly lines of large plants, to post-Fordism, which presumes small-scale production, customized products, multi-skilled workers, flexible work roles, robot-computerization-team work, and small to medium-sized plants (Murray, 1989). Thus, the assumption is that in post-Fordism, not only is the workplace said to be changing, but also its significance in the economy and society is considered to be dwindling in comparison with the sphere of consumption. In addition, this should make it possible to understand how, according to Kondratieff's long wave theory, which is sometimes criticized as being based on mechanistic assumptions, transformations in strike activities are related to specific economic and societal changes.

In this vision, as unions adapt to their environment, they shift between militancy and cooperation; that is, from ambitious demands, the mobilization of members, collective bargaining, the use of disruptive protest, and ideologically defined aims to moderate demands, institutional negotiation, and conceptions of partnership (see Table 1.2).

While resource mobilization theories were useful in accounting for a certain amount of transformation in labour action, Kelly's work was discussed from various perspectives, pushing researchers to expand the analysis of additional processes. One of the main criticisms was the lack of a conceptualization of frames, discourses, and narratives. As Kelly himself noted (2018: 705), while the resource mobilization framework is useful for broadening the conception of power beyond the familiar categories of structural (labour and product market) and associational (trade union density and organization) power, a frame analysis of labour conflict still needed to be carried out. In this direction, research subsequently started to address not only the cognitive, but also the symbolic dimension of union culture. In fact, 'the processes of definition of common interest are not determined by objective conditions

Table 1.2 Union types according to Kelly (1998)

Components	Militancy	Cooperation
Goals	Ambitious demands in scale and scope	Moderate demands
Membership resources	Strong reliance on mobilization of union members	Strong reliance on employers, third party or the law
Institutional resources	Exclusive reliance on collective bargaining	Willingness to experiment beyond collective bargaining
Methods	Frequent use or threats of industrial action	Infrequent use or threats of industrial action
Ideology	Ideology of conflicting interests	Ideology of partnership

Source: Kelly (1998)

alone; interests are constituted and articulated through ideological discourses and therefore do not have a prior existence independent of the awareness of social actors' (Canel, 1992: 49). It is therefore 'the development of workers' interests into collective forms that attribute a sense of injustice and create social identities is a socially constructed process' (Darlington, 2018: 622).

Furthermore, Kelly's use of the resource mobilization approach was criticized for conflating mobilizing and organizing. In particular, it has been observed that:

a focus on just mobilization risks creating a movement that has little sustainability. At its most problematic, mobilization can create an illusion of strength (when activists are able to temporarily compensate for the inactivity of members or the wider workforce), but is unable to be sustained because of a lack of power that comes with mass supportive activity. (Holgate et al, 2018: 602)

Those who mobilize are already mostly 'dedicated activists who show up over and over at every meeting and rally for all good causes, but without the full mass of their co-workers or community behind them' (McAlevy, 2016: 10). Conversely, 'deep organising' is characterized by 'high levels of participation by union members who decide for themselves the issues around which they will organize: organizing places the agency for success with a continually expanding base of ordinary people, a mass of people never previously involved' (McAlevy, 2016: 10). So, in 'whole-worker organising', workers embedded in their own communities are the 'organic worker-leaders'.

Finally, while Kelly's study views the leaders as key in establishing a shared view of problems and a sense of a collectivity, others have pointed to the importance of members, and therefore the role of a union as a social movement organization (Gahan and Pekarek, 2013). Leadership skills can indeed develop in action, from the mobilization itself, rather than being a precondition for it (Atzeni, 2010) and rank-and-file union members can play an important role in 'translating grievances into a sense of injustice, blaming management, and encouraging collective forms of activity aimed at protecting workers' immediate interests' (Darlington, 2018). Indeed, leaders need to be able to not only lead effectively by assessing the situation and suggesting adequate strategies, but also to develop listening skills (Barker et al, 2013: 5–11).

Political consciousness through collective action: on emergent subjectivities

The critique of the resource mobilization approach as considering resources to be a given is linked to a third way in which social movement studies and

labour studies have been connected, that is, looking at how the struggles themselves transform the collective identities of workers. As [Darlington \(2018: 623\)](#) has noted:

conflict is rooted in the structurally exploitative and conflictual nature of the capitalist labour process, it can produce spontaneous and unorganised forms of workers' resistance that are not dependent on an alleged 'stageist' process in which 'vanguardist' ... leaders are required to frame workers' grievances in a mechanical pre-determined movement from injustice to collective action.

Therefore, in some circumstances action can precede rather than follow organizations and collective identification, 'with "natural" leaders only emerging from the mobilisation, rather than being a precondition for it'.

It is only in recent years that, in addressing social struggles against inequality, social movement studies have started to pay due attention to the social bases of protest ([della Porta, 2017](#); [della Porta et al, 2017](#)). What has, however, remained largely unexplored is how collective action creates a sense of belonging to a collectivity, and even less so how class consciousness emerges in action. As we suggest in this volume, in fact, while structural, socio-economic, and political conditions can be unwelcoming for collective struggles, mobilization can construct such conduciveness. In doing so, we will build upon and attempt to bridge some contributions in social movement and labour studies that have addressed the general issues of how consciousness develops in action, often referring to concepts such as collective identity or solidarity.

In the orthodox Marxist tradition, class consciousness is linked to structural conditions of exploitation. This concept refers 'to the awareness of itself as a class which the dominated class within capitalism, the proletariat, is predicted to arrive at. When the proletariat becomes aware of themselves as a class and of their collective strength, Marx claims, they will rise up in revolution and overthrow the bourgeoisie masters' ([Crossley, 2013: 203](#)). The proletariat is initially unaware of its own exploitation, only later acquiring a consciousness that it exists as a class for itself (rather than just in itself). In such a view, the path to consciousness passes through a series of capitalist crises of overproduction and wage decreases that can produce class consciousness through their effects in terms of growing inequalities, increasingly exposing the exploiters and making the workers aware of their interdependence.

While the idea of a class consciousness emerging automatically from the hardening of exploitation has been criticized, in social movement studies a more concrete focus has developed on the emergence of collective solidarity in action. From this perspective, Rick [Fantasia \(1988\)](#) has influentially

analyzed the micro-mobilization dynamics of strikes, which go beyond strategic calculation, the struggle itself having a prefigurative effect. During collective action, workers experience a different way of living, of interacting with their colleagues, and of coordinating pickets, marches, or occupations which can trigger emerging forms of reciprocity and solidarity. It is this transformation in the everyday experiences of the participants, through the disruption of old routines and the development of new ones, that creates cultures of solidarity, with new relationships developing in the factories but also outside them, in the broader community.

Research has, in fact, pointed to a number of different dynamics in the various struggles. In this regard, Maurizio [Atzeni](#) (2010: 12) has pointed to the importance of labour resistance beyond the trade unions, especially in specific moments within a cycle of contention:

The relevance of these forms of collective action in which workers' mobilising power is initially expressed in a spontaneous and uncoordinated manner is both historical and theoretical. Cyclically but relentlessly, grassroots movements and spontaneous workers' protests have appeared in many countries and at different times. ... The history of workers' organizing has always been characterized by a pendulum swing between institutionalisation and workers' emancipation, between a search for compromise and recognition on the one hand and direct action on the other, reflecting power relations at the workplace and in society. ... While the importance of leaders, established workers' organizations and political parties in building and strengthening workers' actions is often fundamental in counteracting capital's tendency to create divisions among workers, the repeated, spontaneous explosions of workers' resistance are testimony of their powers of self-organization.

The presence of a cyclical re-emergence of different types of struggles has been linked to the unfolding dynamics of the development of collective identities. In his groundbreaking research on the revival of labour struggles in Europe between the end of the 1960s and the beginning of the 1970s, Alessandro Pizzorno conceptualized *struggles for the recognition* of emerging social groups as a preliminary step for the struggles on specific interests, given that the latter can only be assessed once collective identities are formed. In this sense, as he has suggested, a first-degree exchange, directed towards the creation of collective identities, is a precondition for a second-degree exchange, aimed at achieving specific benefits and utilities. Therefore, recognition becomes a core aim of the struggles of emerging groups as, '[i]n order to be able to assess his/her interest, the calculating subject needs a recognition of an identifying collectivity. From the latter, s/he will

draw criteria that makes the definition of interest intelligible or, in other words, allow to give meaning to action' (Pizzorno, 1993:167). Struggles for recognition express the need of emerging groups to construct a collective identity around which future advantages can be assessed. By building circles of recognition, collective action constructs solidarities, transforming particular aims into general ones (Pizzorno, 1991: 221–3; 1993). Social movements allow for the formation of a collective identity by embedding the individuals into collectivities.

These insights made it possible to understand the wave of strikes (often unofficial and spontaneous), that spread in different forms all over Europe between the end of the 1960s and the beginning of the 1970s, extending to different sectors, geographical areas, and types of workers (Crouch and Pizzorno, 1978). The length of the conflict, as well as its intensity, grew with the recourse to direct action inside the factory. The growing role of mass workers brought about an increased capacity to control plant disputes through decentralized workers' assemblies and strike committees, with a marked shift towards the base in the control of strikes (Dubois et al, 1978), through the development of new structures of representation. This was related to the use of more radical forms of action, especially those that made it possible to disrupt production without a total loss of earnings by the strikers, through shop floor strikes, coordinated sector-by-sector stoppages, industrial sabotage, sit-ins, the eviction of top managers from the factory, occupations, *greve bouchons*, *greve perlees* (go slow), *greves tournantes* (sector-by-sector stoppages), *scioperi a singhiozzo* (shop floor strikes), *scioperi a scacchiera* (in-plant strikes), but also through a ban on overtime, marches, as well as militant picketing. More radical forms of action developed together with more rank-and-file control. New forms of action were, moreover, oriented towards addressing grievances by introducing changes in the work organization, reducing rates of pay, reorganizing job routines, declining jobs, and altering working hours. In this way, working conditions and job organization were transformed, for example by rearranging the workflow to avoid repetitive tasks.

A major contribution made by Pizzorno was his singling out of the elements for a resurgence of labour conflicts that were closely linked to the relational dynamics of the cycle of protest itself. Periods of intense contention, in particular, produce innovation in the form of protest. In Alessandro Pizzorno's analysis, this innovation is to be expected, particularly during struggles for recognition. In action, the mobilization of symbols 'allows members of a community to recognize themselves as such with ensuing possibility to mobilize solidarities and collective action' (Pizzorno, 1983: 175).

Social movement studies have traditionally considered protest as a 'dependent' variable, investigating the conditions for its development. Only recently have the emergent characteristics of protests as 'eventful' in terms

of their capacity to create resources and opportunities been highlighted (della Porta, 2017). Alessandro Pizzorno's reflections on the struggles for recognition contribute to an understanding of how action challenges structures, producing collective identification. As he noted:

The processes of the formation of new collective identities and of the dispersion of power may thus be seen as responsible for the destabilisation of a system of industrial relations and for the increase in claims and conflict. But they tend also to generate processes in the opposite direction, that is to have restabilising effects. A first type of re-equilibrium process takes place when new collective identities are recognised and become a component of a new system of representation. An important historical instance was the way in which the entry of new industrial workers in several European labour movements around the turn of the century influenced union structures and transformed systems of industrial relations. Such a process of reabsorption has two aspects. One is the transformation of the universalistic claims of the movement (the *non-negotiable* claim, based on a universalistic right, to have the new identity recognised) into sectional, corporate claims. ... The second aspect is the transformation of an expressive participation, based on the assertion of a new collective identity, into an instrumental participation based on the calculation of individual gains and losses. ... This however implies the reintroduction of a process of representation, with the acceptance of the system in which it must take place, and the pursuit of *negotiable* ends. (Pizzorno, 1978b: 294)

During the resurgence of the class struggle in the late 1960s and early 1970s, the very innovation in the forms of action fuelled the mobilization, influencing the organizational forms it took. In particular, studies on the so-called 'hot autumn' in Italy in 1969 (triggering a long-lasting and massive wave of strikes that lasted for years) showed that:

internal action allows an almost uninterrupted mobilisation of workers, avoiding the risks both of long truces and of the conflict 'to the finish'. Moreover, it requires the active participation of every worker; at first it provokes frequent liberating outbreaks, and afterwards makes a definitive change in the social relations of the factory. Above all, the new forms of action lead to a decentralisation of conflict, since they give more responsibility to the 'shop delegates'. (Regalia et al, 1978: 116)

Collective mobilization, therefore, grew on its own, through imitations and collective learning. Triggers, such as the student protests, were important in the beginning of the cycle as '[w]hat was necessary then ... was a sufficiently

strong signal; and this was provided by the students' revolt and the fact that the students had wrung concessions from a government which had denied them to the working class' (Soskice, 1978: 243). Following the initial spark, different groups of workers get involved in the mobilization.

In this sense, these historical antecedents show how action reflects, but also contributes to an increase in the workers' consciousness. In particular, 'strike action expresses class struggle: militants stress the role of the strike in developing political awareness and in mobilising the working classes. By virtue of this, strike action can be said to "point the way towards the coming socialist society"' (Dubois et al, 1978: 67).

In summary, research on labour protest has shown how the location within the production process often provides an ambivalent mixture of opportunities and constraints regarding mobilization. The dynamics of collective action comprise old and new repertoires that adapt in time and space to the specific conditions of the struggle, with a bridging of innovative strikes, practices of the objective, direct social action, massive marches, and symbolic actions. Mobilization challenges old structures of representation and pushes for the development of new institutional and social innovation that produces new identities, which in turn crystallize into new organizations of interests. The framing of the struggle reflects the calls for recognition, through the developments of demands for equal treatment as well as the improvement of working and living conditions. This relational approach can be helpful in addressing current debates on the revival of worker mobilizations, where new collective actors are emerging in a deeply transformed digital landscape, and where conflict triggers new collective processes of identity formation.

Indeed, the identification of collectivism/collectivist identities with organized collective institutions, in the form of trade unions, led to a failure in accounting for new collectivist discourses at work and their evolution as sites of struggle (Martinez Lucio and Stewart 1997). In this respect, important developments are taking place with the growth of workers' centres and non-union worker groups, community unions and community campaigning in developed and developing economies. These new or hybrid forms are both a reflection of and stimulus to a wider variety of labour struggles. In short, new forms of collectivism rooted in the informal organization are far from dead in 'new' workplaces with aggressive employers (Thompson, 2016).

Our research and this volume

These theoretical arguments will be further developed in the following pages, focusing on the recent spread of labour struggles in the field of digital work. The empirical material on which this volume is based comes from both secondary sources (scholarly literature, reports, and unpublished manuscripts) and direct research fieldwork experience and document analysis.

Through an in-depth and comparative investigation of various cases of digital worker mobilizations, with a particular focus on drivers and good-delivery couriers who are then pored with work-on-demand, in particular the Amazon Mechanical Turk workers, we aim at singling out innovations in labour conflict in the regions of the Global North in which established trade unions have long dominated industrial relations (Visser, 2012).¹ Our study illustrates the common trends concerning the organizing strategies, the action repertoires, and the main claims developed by the platform workers under investigation, as well as some differences *else* regard to specific labour conditions. This analysis is built on two main empirical sources. The first is our direct fieldwork experience in a joint research project aimed at exploring the mobilizations of such workers in the Italian context. The second is a structured comparative secondary analysis of the ever-growing literature dealing with the collective organization of various segments of this new global precarious workforce.

Empirically, we build upon a comparative analysis based on secondary sources related to the development of contention in digital platform labour. Without aiming to robustly test the hypotheses, the use of secondary sources is certainly helpful in contextualizing and double-checking oral history accounts. As Daniel Ritter (2014: 107) noted, in the use of comparative analysis, most often:

the objective is not to discover new facts, but to provide a new interpretation with help of ‘old’ evidence. As a consequence, comparative historical researchers depend especially on the meticulous work done by historians and area specialists, but also on that produced by sociologists, political scientists, anthropologists, psychologists, diplomats, and journalists. As a rule of thumb, anything written from a social scientific or professional perspective could constitute evidence. The comparative historical scholar’s task is in part to evaluate the credentials of other authors, and thus the credibility of the sources.

The relevance of digital platforms ensures the existence of abundant social science literature, also often allowing for the triangulation of accounts by different authors. Indeed, following Ritter’s lead, we have made use of all three categories of secondary sources: national level historical accounts, texts focusing specifically on the research topic, as well as texts dealing more specifically with factors considered as causally relevant (Ritter, 2014).

Regarding the Italian case, the volume draws on fieldwork examining two types of digital workers in the logistic sector, which were selected on the basis of a most similar research design: that is, food-delivery couriers and Amazon drivers. In the empirical analysis, data from several sources was

triangulated. A main source of information was in-depth interviews with social movement activists. By gathering the reflections of the interviewee, the interviews constitute a fundamental tool for generating empirical knowledge through asking people to talk about certain themes (della Porta, 2014). In social movement studies, the relative scarcity of systematic collections of documents or reliable databases makes in-depth interviews even more important. Ideally, in-depth interviews are preferred, especially where the researcher aims for a detailed description of the situation: attention is paid to the process and interest taken in the interviewees' interpretations of the process itself. Not only do in-depth interviews provide information about (and from) rank-and-file activists, for which few other sources are available, but they are also of fundamental importance for the study of motives, beliefs, and attitudes, as well as the identities and emotions of movement activists, since they put human agency at the core of movement analysis (Blee, 2013). In general, in-depth interviews are best suited 'for establishing the importance of agency or ideational factors, such as culture, norms, ethics, perceptions, learning, and cognition' (Rathbun, 2008: 691). In our research, in-depth interviews have in fact been a rich and flexible instrument of data collection on the movement memories as embedded in the recent waves of anti-austerity protests.

In combination with in-depth interviews, participant observation enables the collection of first-hand data on the micro-dynamics of mobilization. In particular, in a field in which data must be collected first hand, 'participation and observation combined with other methods for triangulation produce data that are confident enough for extrapolation' (Balsiger and Lambelet, 2014: 146). One thing that is particularly relevant for social movements as emerging phenomena is the capacity of participant observation to 'view and understand events from the perspective of the people we are studying. Researchers take part in the same situations in order to understand the contradictions, the stakes and the social expectations that people being studied experience' (Balsiger and Lambelet, 2014: 146).

In addition, written and visual organizational documents were analyzed using a qualitative form that bridges discourse and frame analysis in order to understand the social construction of solidarity and identification processes. In fact, as Lindekilde (2014: 196) observed, both:

share an interest in the work of interpretation and meaning-making in activism and social movement communication. The analytical focus is on how ideas, culture and ideology are used, interpreted and spliced together with certain situations or empirical phenomena in order to construct particular ideative patterns through which the world is understood, and which can be used to mobilize support of particular political goals. No matter the terminology, the idea is to

analyse how movement actors through various sorts of discursive practices and framing activities attempt to strike chords of existing cultural experiences, narratives and knowledge within the cognitive landscape of targeted audiences. Thus, both discourse and frame analysis are preoccupied with investigating the relationship between movement ‘texts’ and their wider contexts. Put more abstractly, the combined interest of discourse and frame analysis is the discursive battles over meaning and definition of reality, which play out within social movements, and among social movements and their friends and foes, often in the public sphere.

More specifically, the study of the mobilization of workers on Amazon Mechanical Turk in the global context is based on scientific articles, policy reports, and unpublished manuscripts, while the study of the mobilizations of Amazon drivers and food-delivery couriers in an Italian context stem from our research fieldwork undertaken between April 2018 and February 2019 in the cities of Turin, Milan, Bologna, and Florence. In this research fieldwork, a range of qualitative methods were adopted and triangulated (in-depth interviews, participant observation, and document analysis).

First and foremost, workers, union representatives, and activists were interviewed, with the aim of collecting data on topics relevant to the main research question on mobilization processes. Interviews were structured according to three main topics of investigation: 1) working conditions (addressed to workers); 2) processes of technological and organizational innovation in the workplace (addressed to workers and union representatives); and 3) informal resistance and forms of collective organization and action (addressed to workers, union representatives, and activists). More specifically, in the case of food-delivery workers, 18 respondents employed by Glovo, Deliveroo, Foodora, and JustEat were interviewed and ten in the case of Amazon drivers. All 28 interviews were transcribed and analyzed with the aim of identifying the role of workers’ agency and, more specifically, the informal resources and capacities they adopted in all the aforementioned processes (particularly point 3), as described by our respondents.

Furthermore, the data obtained through these interviews were triangulated with participant observations of political meetings and worker assemblies, demonstrations, and strikes with document analysis in order to compare the respondents’ interpretations of the processes of collective organization and mobilization with the actual practices and actions carried out.

In the case of food-delivery couriers, informal assemblies were conducted at local social centres, thus enabling easy access and the possibility of participant observations. In the case of Amazon drivers, on the other hand, this was made more complicated by the absence of a physical place in which workers could mix socially. Consequently, in the latter case, most of the

notes were taken in parking spaces outside of the Amazon stations, where workers meet at the end of their shift.

In short, this triangulation made it possible to verify, either by confirming or dismissing, most of the information provided by the respondents (see the [Appendix](#) for the full list of interviewees).

Aside from the present introduction, the volume comprises a further five chapters.

[Chapter 2](#) looks at the structural transformations triggered by the processes of digitalization to demonstrate how they have been able to redefine:

- at a macro-level, global competition based on innovation, which has reconfigured the nature of industrial production and new digital markets;
- at a meso-level, the ordering of company structures in terms of a network-based organization coordinating a set of nodes composing a global production chain;
- at a micro-level, changes in the meaning of work, the nature of the relationships between technology and work, the workplace and its organization, the constraints and opportunities for worker collective identity and organization.

The current wave of digitalization is redefining the relationship between work and technology, while also renewing classic debates and questions that have been raised throughout the development of industrial society. In the digital economy, spaces of flows – defined by Castells (1989) as spatial arrangements under the new technological connectivity – are becoming more important than places themselves, and this is having an effect on the new international division of labour, which is being organized around specific global production chains. The dynamics of digitalization intersect with the traditional functions of competitiveness in terms of the demands for cost-saving to respond to increasing global pressures. Furthermore, competition for time, quality, and costs is placing new pressures on organizational and technological innovation, which need to articulate strategies of automation and flexibility. This can be seen to be the case on three levels: 1) in traditional industrial production, where new programs of Industry 4.0 are attempting to integrate new forms of automation with new flexible and ‘lean’ principles; 2) in the reorganization of services and work through digital platforms and the rise of crowdwork; and 3) in the growing centrality of digital labour.

Digital platforms are undoubtedly reshaping the global digital economy. Their emergence and diffusion are currently producing technological and organizational innovations in a variety of economic sectors, transforming productive processes, working conditions, and forms of consumption. In this sense, this chapter identifies the specific challenges raised by the transformation of the workplace and by social relations more broadly.

By linking social studies of technology, critical political economy, and labour studies, the chapter analyzes the ways in which digitalization can be considered to be a factor that not only disrupts traditional workplaces and social relationships between workers, but also, conversely, shows how workers can exploit the new opportunities opened up by the new technological landscape to reshape social relations and worker organization. While specific technologies can lead to new forms of degradation of work, showing the persistence of some classic tendencies in capitalist production (Braverman 1974), old and emerging tensions can trigger new forms of resistance on the job or forms of mobilization where workers can correct and reshape technological processes (Edwards and Ramirez, 2016). The chapter covers the current wave of digitalization and automation of classical work that define technology as neither neutral nor autonomous, but rather as an outcome of social interests embedded in its design and application, which directly refer to the power of designers and planners (Noble, 1986). At the same time, it links the critique of technological determinism developed by the social shaping of the technology paradigm (MacKenzie and Wajcman, 1985) by looking at the interactions between the digital transformation of the workplace and the identity formation of new typologies of digital workers.

Chapter 3 discusses the main structural and political challenges underlying the organizational processes employed by digital workers for collective action. Firstly, we present our definition of digital work, on which the analysis is based, followed by an explanation of the rise of digital worker mobilizations. After setting out a typology of digital workers, the chapter empirically addresses the main challenges to collective action for the two macro-categories of digital workers under investigation in the book, namely, those involved in crowdwork and those who work on demand via apps.

By building up a typology of labour process transformations connected to digital work, the chapter discusses the main challenges that these two categories of digital workers face in organizing collective action at the workplace level. Most of the obstacles to collective organizing by workers in the platform economy derive from specific processes of labour fragmentation that the digital intermediation of platforms induces either directly or indirectly. More specifically, five processes of fragmentation in platform labour are identified, understood as the active isolation or the prevention of worker collectivization (Huws, 2014), distinguishing them as: legal, technological, organizational, spatial, and social (Heiland, 2020). Each of these is introduced and discussed at length for both categories of digital work under investigation.

Chapter 4 offers an overview of the vast array of organizational forms and action repertoires that both crowdworkers and workers on demand via apps have adopted to improve their working conditions over the course of the last decade. We draw on our direct experience of research fieldwork, aimed at

exploring the mobilizations of some of these categories in the Italian context, as well as on the growing research in the fields of IR and Social Movement Studies (SMS), which have recently dealt with the collective organizing of various segments of this new precarious workforce.

The mobilization of such workers is particularly puzzling, as they are employed in working circumstances that share several features which in the scholarly literature are considered as not conducive to the emergence of collective action. Among these, the chapter deals specifically with 1) the high levels of technological and organizational innovation, and 2) an absence or ineffectiveness of traditional trade unionism.

The different levels of fragmentation notwithstanding, our research points to growing numbers of mobilizations outside institutional union channels, despite the presence of technological and organizational innovation in the labour process. Focusing on the organizational process, the overall aim of the chapter is to understand why and how these mobilizations have occurred, considering the mobilization of sources of power that are alternative to those usually considered in IR. Indeed, it is argued that certain categories of these workers are able to overcome various barriers to mobilization by relying on specific resources and opportunities, both related to their workplace and external to it. Even though a few studies have specifically paid attention to ‘workers’ voice in platform labour’ (Heiland, 2020; Wood, 2020) or ‘worker protest in the platform economy’ (Joyce et al, 2020), to date no attempt has been made to identify the mobilizing trajectories of the different categories of digital workers and their distinct organizational forms and action repertoires separately. In this chapter, we do so by distinguishing between the forms of organizing and action of crowdworkers and on-demand workers. In particular, specific attention is paid to the mobilization processes of Amazon Mechanical Turk workers, Amazon drivers, and food-delivery couriers across various countries and regions.

Chapter 5 looks at approaches that have been used to examine the emergence of consciousness in action, exploring the specific moment in which new subjectivities emerge. The chapter links classic and contemporary theories of class mobilization with more empirically grounded, current debates on the transformative power of collective action and conflict. A particular aim of the chapter is to bridge contributions from labour studies that have analyzed the role of strikes in the definition of worker solidarity (Hyman, 2001) with social movement studies investigating the processes of identity formation through conflict (Pizzorno, 1978a) and the relationship between old and new types of social movements (della Porta, 2015).

From a theoretical point of view, the chapter contributes to the revival of the historical and political debate on class consciousness emerging from the workplace (Crouch and Pizzorno, 1978; Fantasia, 1988) by aiming to make sense of the new labour conflicts in the digital economy. More notably, it

addresses this debate from the specific angle of social movement studies (della Porta and Diani, 2020), which links political consciousness to collective identification happening as a result of a collective mobilization. Such a process is located within a framework of ‘solidarity in action’, which emphasizes the dynamics and processual components of workers’ political identity. In doing so, we draw on Alessandro Pizzorno’s concept of the struggle for recognition (Pizzorno, 1978a), looking at the development of group identification among workers as the precondition for such a process of collective identity to emerge. Indeed, this process of identification is also crucial in the identity-making of the categories of digital work under investigation.

Building on Pizzorno’s framework, the chapter looks at how the processes of identity formation have not been confined to their work setting, but rather – as shall be shown – build upon and develop specific political and social conditions within and beyond the workplace that have affected the capacity of digital workers to build their own political identities and organize collective action. Therefore, by moving the analytical focus beyond the employment relationship and firm boundaries, an analysis of what defines the primary identities of digital workers is developed.

Chapter 6 comprises a summary and discussion of the main theoretical achievements represented by the explanation of the new mobilizations of digital workers, providing several arguments as to why a renewed approach, bridging social movement studies and labour studies, is key in understanding the new labour conflicts in the digital context. More specifically, we revisit the three aforementioned frames of references on the bases of our empirical evidence, suggesting a theoretical means of combining the attention to structural conditions of conflicts, workers’ agency, and their organizational dynamics, as well as the emergent power of eventful protests (della Porta, 2020). The chapter goes on to highlight how our contribution sheds a light on the specific characteristics of work affected by the new technological transformation as well as the mechanisms and processes that trigger new collective identity and mobilization processes for workers. In providing a critical overview of our overall study, we point to the potential developments at the theoretical and empirical levels, while at the same time expounding the most problematic challenges that currently face the research agenda on the new labour movement, such as the reconfiguration of the (digital) workplace, new forms of platform intermediation, technological acceleration, the gig economy and work fragmentation, collective identity formation, and labour recomposition. By bridging labour studies and social movement studies with debates on the rise of a new digital working class (cybertariat, info-proletariat, digital proletariat) the chapter suggests an approach for making sense of the processes of class mobilization that concerns new precarious workers in general.

The New World of Digital Work: Structural Changes and Labour Recomposition

Digitalization of labour and global value chains

It is necessary to investigate digitalization as a global phenomenon that responds to the new logics of capital accumulation and expansion in terms of both space and time. While Information and Communication Technologies (ICTs) have enabled the rise of a network-based company structure, they have also triggered new forms of division of labour and a new organization of production. Technology and labour are distributed in global value chains that are based on different phases and different contents of production and take place in specific places. At the same time, far from being a linear process, technological innovation and global production chains are constantly being reshaped by economic and political processes, which take place at different specific nodes.

Structural changes triggered by the new phase of digitalization compels us to take a critical look at the relationship between work and technological innovation. The new forms of work, new production processes, and new services introduced by digitalization and platformization need to be understood as specific social phenomena that form part of a more general process of global economic competition involving both traditional industries and new companies. Temporal acceleration and constant connectivity are two of the main principles of the new world of work shaped by digitalization, which through outsourcing and offshoring is extending its networks of production into new areas of the globe. Although most of the implications of this process are global, a focus on specific sectors is essential in order to avoid the shortcuts of deterministic and unilinear hypotheses. Indeed, contradictory dynamics are at work at different levels of this process. This

is especially the case in a highly fragmented, specialized, and constantly changing international division of labour in which State, transnational institutions, traditions of industrial relations, and worker power operate.

In the current networked configuration of international production and trade, the expansion of digital technologies in terms of both space and time needs to be investigated through the analysis of its 'global value chains' (Gereffi et al, 2005). This involves looking at the complex phases of production that are distributed across several areas of the world. One of the main emerging labour divisions implies the formation of a centre (or 'head') of the chain, which governs and directs knowledge work, designs productive and managerial innovation, and the articulation of 'arms' that organize, execute, and perform manual work and material production. While highly skilled sections of the knowledge workforce are mainly concentrated in the core areas of technologically advanced countries, unskilled and low-paid workers employed in the material extraction of resources and in production are mainly located in the peripheral areas of the world economy, although the increase of global competitiveness in many emerging countries, such as the BRICS, has challenged this division. Indian software engineers and newly skilled industrial car workers are among the few examples of a growing global convergence that are in contrast to a unilinear skill polarization process (Fuchs, 2014; Jürgens and Krzywdzinski, 2016). The new global production that is developing in terms of space, by finding new geographical areas of business, and time, by coordinating production with new time-saving processes and technologies is thus characterized by complex global value chains that are constantly readapted and renegotiated. In international competition, new business strategies are centred around a paradigmatic triad: they offer a greater variety of products and services, at lower costs, and in a shorter space of time (Stalk and Hout, 1990).

The fall of the Berlin Wall in 1989 and China's entry into the World Trade Organization in 1999 have reshaped the forms of democratic domestication of capitalist accumulation in Western countries. Two main reciprocal pressures contributed to reshaping industrial relations: 1) an East-West path, defined by the diffusion from Japan to the Western advanced capitalist countries of the organizational principles of 'flexible accumulation' identified with Toyotism and lean production (based on total quality, zero waste, participatory teams); 2) a West-East path, defined by the offshoring of the low-skilled and low-paid productive processes to the semi-peripheries and peripheries of the world, with China becoming the 'factory of the world' (a position that is now rapidly changing) and Eastern European countries facing processes of transition to the neoliberalization of their economies (Bohle and Greskovits, 2007).

Having identified the main structural changes that restructured the international political economy, the following sections will look at how

digitalization has reshaped new forms of work and has also been affected by new forms of worker conflict.

Labour recomposition processes in the new phase of digitalization

The current transformation of the digital economy is taking place in a context of global competition that favours outsourcing and offshoring in new areas of the world. Increasingly organized around the principles of global connectivity, work and technology reciprocally shape each other in interaction with specific social and institutional conditions, such as transnational legal frameworks, varieties of production regimes and modes of organization, as well as labour market and employment relations regimes. These conditions vary depending on specific local contexts and the pressure of transnational institutions, the interaction of which determine the opportunities and constraints for both capitalist accumulation and for growing worker power. Far from being deterministically unilinear, global economic processes and capital growth rates are constantly reshaped by processes of workforce recomposition through conflict. In this regard, the work of Beverly Silver has contributed to a renewed attention to the role of ‘labour unrest’, as a world-historical phenomenon that reshapes the nature and trends of global capitalism. As ‘[w]here capital goes, labor-capital conflicts shortly follow’ (Silver, 2014: 50), the rise of worker protests and working-class organizations are certainly among the factors that modify the location and mobility of international capital as well as its growth rates, going beyond a Eurocentric perspective.

The analysis of digitalization and the related conflicts regarding the new types of pressures and constraints it posed to the world of work needs to thus take into consideration the new spatial and temporal opportunities put in place by the increasing application of ICTs, which have opened up new space for transnational communication and coordination of worker organizations. At the same time, notwithstanding the new global scale of expansion of digital technologies and the growing importance of flows through places, emerging conflicts are still anchored in specific physical locations. The expansion of a new global working class in the low-paid sectors of industries in the peripheries is visible in different forms. A significant example of this is the case of Foxconn, a multinational factory which provides services for the US technological giant Apple. Since 1996 it has experienced constant growth, making it the third largest private employer in the world after Walmart and McDonald’s. Its main industrial workforce is located in Latin America, Asia, Central and Eastern Europe and bears the peculiar characteristics of a ‘transnational working class’ (Sacchetto and Andrijasevic, 2017). Its plants and offices have been the arenas of intense

labour unrest and international solidarity struggles, as seen in the case of the Chinese Foxconn factory where iPhone and Apple components are assembled (Chan et al, 2020). In Western countries, deterministic accounts that describe the rise of a creative class composed of knowledge workers (Drucker, 1996; Florida, 2002) have been disputed by the emergence of an ever larger precarious workforce in the service sectors, which became visible through its first collective mobilizations in the 2000s. One of the most hotly debated issues of the last decades has been whether this new precariat can be considered a class in and of itself and whether it will be able to build new alliances with other components of the working class (Standing, 2011; 2014). The structural transformations in work triggered by digitalization need to be explored from a critical perspective, which bridges the social shaping of technological change with an analysis of labour-capital conflicts through three different but interrelated processes:

- Work in *production*, characterized by the integration of technology of automation and artificial intelligence into production processes, as in the case of the German project, Industry 4.0 (Forschungsunion and Acatech, 2013; Lasi et al, 2014).
- Work in *services*, characterized by processes of platformization and fragmentation in terms of on-demand ‘gig work’, as in the case of the care, mobility, and delivery sectors (De Stefano, 2016; Crouch, 2019).
- *Virtual work*, as a constellation of digital labour practices based on *prosumption* (produce + consume) (Ritzer and Jurgenson, 2010) and data extraction through the spontaneous connectivity of users or the organized connectivity of human robots/data analysts (Casilli, 2020).

As will be seen in the following sections, while it is useful to keep this distinction at the analytical level, the three processes frequently coexist in hybrid forms. Automation in industries is linked to processes of platformization of services, as in the case of *Amazon*. Data extraction of user behaviour is related to users and consumers on the web, worker performance in the new factory 4.0, and new platform-based ‘gig workers’. In some cases, the use of algorithms to monitor working processes and worker behaviour is simply an extension of lean principles, such as *Kaizen* (continuous improvement) and ‘total quality control’, that redefined the work organization of Western companies after the productivity crisis of the 1970s and up until the World Class Manufacturing (WCM). In many cases technology triggers new organizational processes or intensifies existing ones rather than substituting them. In this sense, the new paradigms of industry 4.0 and the so-called ‘smart factory’ can be seen as ‘the long tail’ of Toyotism and as an extension of the principles of lean production. In services such as urban mobility, care, or delivery, platformization creates new

jobs, modifies the notion of a workplace based on space-time presence, the employer-employee relationship, and the definition of contractual rights. In the logistics or communication service sectors, algorithms are at the core of new forms of digital Taylorism. It can be said that these emerging forms of worker control, contractual individualization, task parcelling, and the separation of conception and execution mark the return of piece-rate work payment systems (Brophy 2017; Woodcock 2017).

Value, relations, and identities in the new phase of digitalization

While opening up new technological challenges and opportunities, the digitally based organization of production is also reshaping the classic relationships between work and technology. It is important to explore their interaction in a critical way in order to avoid falling into the trap of technological determinism. To do this it is necessary to put these transformations into context, which means connecting them to the structural changes that are driven by a networked capitalism operating over complex global production chains.

In particular, the development of the three aforementioned processes have profoundly transformed three institutional features of capitalism:

- *Value, value extraction, and accumulation.* Digital platforms extract new sources of value from the constant production and circulation of data. The growing interrelation between ICTs and the everyday sphere of communication, production, and consumption makes these informational traces a key source of value. The accumulation strategies of this new regime of capitalism, which some critical authors have termed ‘surveillance capitalism’ (Zuboff, 2019), rely on extracting the ‘behavioural surplus’ through algorithms designed by private companies and platforms that monitor information produced through user clicks. This is true for users communicating on social networks (Google, Facebook, Twitter, Instagram, TikTok), consumers involved in online purchasing (Amazon, Alibaba), and workers employed through online platforms, or monitored in traditional workplaces through new ICT systems.
- *Employment relations.* While platforms operate in both markets and firms (Casilli, 2020), the process of platformization can be defined as a form of outsourcing and offshoring of work, as well as a form of economic intermediation and coordination. This process has impacted on the meaning of work, its boundaries, and its employment relations. Platforms put users to work through digital labour, without recognizing it as such, exploiting workers’ sociability and denying their interests (Scholz, 2012; Casilli and Posada, 2019; Casilli, 2020). They employ workers by defining their performance as ‘gigs’ and their status as self-entrepreneurs

or collaborators. They bypass labour and associational rights by only recognizing specific tasks as ‘work’ and exploiting new opportunities of unpaid labour (Woodcock and Graham, 2020).

- *Collective identity and worker organization.* Be it in the traditional industrial/service workplace or in the new platform-based or crowdwork form, digitalization is shaping not only new subjects at work, but also the representation of workers currently unaffected by technological innovation exposed to the risks of technological substitution (Im et al, 2019). New working conditions emerge in a complex and fragmented global value chain that struggle to keep together the various working components, from the highly skilled workforce employed in temporary innovation projects at its ‘head’ to a low-skilled workforce involved at the lowest levels of the extractive and productive chain. Depending on the position in this international division of labour and on the forms of capital this workforce acquire, digitalization is shaping new collective identities. At the same time, new forms of collective organizing and labour conflict are reshaping the relationships between labour and capital. Whether conflict emerges at the ‘head’ of the chain, among the new professionals, the knowledge and tech workers employed through ‘projects’ that require high-level skills, or at the base, at the level of material production, new workers and new actors, with emerging collective identification, are redesigning the forms of organization and the role of unions.

The structural and organizational changes of digital production, based on constant innovation and connectivity, are thus highly relevant given the way they change the nature of collective action employed by workers. These changes not only contribute to the creation of a new working class, but they also reshape worker movements, their forms of mobilization, and organization.

The new worker mobilizations, therefore, need to be interpreted as processual transformations of the forms of mobilization that characterized the previous phases of technological innovation. The rise of the ‘new-economy’ and its subsequent crisis has indeed also affected the forms of social movements and collective action (Davis and McAdam, 2000). The diffusion of ICTs and the rise of a precarious workforce in the new telecommunications services (Brophy, 2017; Woodcock, 2017), the world-wide spread of worker protests at Walmart (Li and Liu, 2018; Reich and Bearman, 2018), and Foxconn (Chan et al, 2020) are just some of the many examples that show how new collective identities and forms of collective action are emerging, as historically determined critical forces that reshape the relationship between technology and work.

It can certainly be said that the new digital landscape is transforming the tools of mobilization, with ICTs being described as ‘digital weapons of

the weak', as seen in early experiments of their use in the European Social Forum (della Porta and Mosca, 2005) and 'Occupy Wall Street' (Conover et al, 2013). Moreover, the new transnational and network structure of digital technologies is shaping a new transnational and networked working class, which is experiencing new constraints and opportunities at different points on the global value chain. One of the greatest challenges of this new panorama is linking the 'old' social movements in the peripheries to the 'new' movements of the core sectors of capitalism.

The following sections will introduce the potentials for a social transformation of technology and work (MacKenzie and Wajcman, 1985) given the main structural changes triggered by digitalization. We will look at the mutable nature of value, employment relations, and worker collective identity on three analytical levels; by analyzing the new industrial workplace, the new services, and virtual work. The relationship between work and technology are, in this sense, constantly affected by both structural constraints and the agentic processes of collective actors.

Digitalization beyond technological determinism

As with any other wave of technological change, the growing integration of ICTs in both old and new sectors of the economy and society have pushed the social sciences to pay particular attention to the nature and role of technological innovation in shaping working relations. Frequently, these analyses go hand in hand with expectations of a future of technological automation and its impact on employment rates. Frey and Osborne (2013), for instance, estimated a reduction of the US workforce to 47 per cent of its current number, while the application of this study to the European workforce by the Bruegel Institute (2016) has calculated the unemployment rate caused by automation to be approximately 45–60 per cent of current workers. Other studies on the impact of robots predict a reduction in salaries and the employed workforce (Acemoglu and Restrepo, 2017).

As is the case for many other simulations, however, these also do not take into account several mechanisms regarding the organizational capacity of the workforce, nor the role of the unions and governments in negotiating and governing technological implementation. Indeed, they risk falling into what science and technology studies have traditionally defined as 'technological determinism' (MacKenzie and Wajcman, 1985; Wajcman 2006). Technological determinism can have different implications, such as the concept that technology develops independently and that its only effects are social or the belief that the currently existing effects always take a certain form. Thus, according to this logic, technology and the social – in this specific case, work – are two separate entities connected by a causal linearity, both in its more optimistic and in its more critical versions (Berg 1998). On

the contrary, research on the social shaping of technology has highlighted how, in most cases, the social context of application plays a major role in deciding which technology to adopt. As a consequence, technology has different effects in different situations. Thus, technological innovation is not neutral, rather it adapts to the traits of society. In particular, the technology of production in a capitalist society is a product of the relationship between employers and workers, and between the workforce itself, embodying the capitalist's functions of labour-saving and worker control (MacKenzie and Wajcman, 1985; Noble, 1986). Recognizing the limits of deterministic definitions of technology means recognizing the critical nature of its design and effects, as well as the potential of social actors to reshape its functions and goals and to challenge them.

Criticizing technological determinism, constructivist approaches have coined the term 'interpretative flexibility' to describe the heterogeneous processes by which the social actors involved bring a technology into existence, constantly negotiating and readapting its technical and social functions to the changing goals (Pinch and Bijker, 1987). In this direction, classic labour process theories have also been pioneering in highlighting the way that machinery and technologies of production embed the social interests of capitalist employers (Braverman, 1974) and how workers put in place mechanisms of resistance (Burawoy, 1979; Thompson, 2016). In relation to work, it is therefore essential to analyze technology alongside the organizational models put in place in specific workplaces as part of a social process which is embedded in business models and employment relationships. This is particularly true in the current transformation triggered by the development of digitalization and platformization, which is reshaping the social relations once at work in traditional industries and the service sectors, as well as creating new workplaces and new social settings for work in the quickly developing virtual environment.

Since the rise of the 'new-economy' and its subsequent crisis, the analysis of technological transformation has been enriched by innovative research on the new subjects at work, and the emerging working environment has been shaped by innovative digital technologies (Fischer and Downey, 2006). The so-called 'new-economy' has been the first case of structural change caused by the mass application of the Internet to economic and organizational processes. Just as industrial society was based on specific technological innovations linked to energy generation and distribution, ICTs have been the structural basis of digitalization, in which business and organizational models were based on the new flexible and networked nature of the Internet. The new tools of connectivity made available by the expansion of ICTs overcame the traditional constraints of space and time and allowed for a flexibility of tasks and fast adaptability. The elasticity of ICTs has expanded the power of business control over time and space,

although the expansion of the network structure has not developed into a unidirectional horizontality and equality between the business nodes. On the contrary, this new structure has created a new centralized power that governs and makes decisions on distant and decentralized executive clusters, a key aspect for the governance of the new global capitalism made possible by the power of new digital technologies (Castells, 2001). The power of these technologies has also created a new cultural atmosphere. A new spirit of capitalism has updated the previous cultural frames of managerial capitalism to the new technological wave: the project, as the universe of working relations, located worker participation in team work, professing continuous self-improvement and introducing constant individual performance tests (Boltanski and Chiapello, 1999). As in the previous phase of capitalism, this new spirit was not only present in narratives of theoretical attempts to describe the rise of a 'new creative class' (Florida, 2002), but it was also visible in the forms of performative tools that structured new economic values and beliefs, as well as practices in the workplace and employment relations (Callon, 2007). The ideas about a flat corporate structure propagating bohemian approaches to working relations and worker identity were indeed not only a narrative hype. They were also part of the organizational and cultural repertoire of the start-up companies that emerged in this first wave of massive marketization of the Internet galaxy (Fischer and Downey, 2006).

While the new organizational mode based on the project unit is visible at the head of the value chain, where knowledge processes and technological innovation is conceived and designed, its effects are not only limited to a universe of knowledge professionals and creative workers employed in high-tech and knowledge intensive processes. These workers experience the costs of flexibility in terms of new employment regimes based on self-employment, which are paid per project unit and subjected to the corporate rhetoric of creative adaptability. However, these processes also affect other sectors of the value chain, including a large slice of the workforce involved in the production and distribution sectors. These changes can, to a large extent, currently be seen in the main companies dominating the new field of digital markets, who are referred to by the acronym GAFAM – Google, Apple, Facebook, Amazon, and Microsoft (Moore and Tambini, 2018).

For this reason, it is important to look at the evolution of organizational and technological innovation at work, by focusing on the sectors where these processes have witnessed the most critical changes and the rise of new collective identities. In particular, this chapter identifies three sectors of concern: 1) new industrial organizations facing lean production and industry 4.0 automation technologies; 2) new service sectors facing platformization and the 'gig economy'; 3) the virtual work of digital labour linking producers and consumers.

Between automation and flexibility: work and the new politics of production in advanced manufacturing

There are certain points where technological innovation allows for new strategies of automation, which are mainly conceived to save labour costs and to increase control over workers. However, the debate surrounding this process has cyclically become bogged down in the limits of these new powerful technologies in facing an increasingly complex demand and working environment, where flexibility is a key asset. Thus, technological innovation should be constantly analyzed as intrinsically linked to organizational change. This has been clear since the advent of lean production, according to which technology is considered to be relevant only as an integrative function of flexible and socially complex forms of organization in which the human factor, endowed with reflexivity and commitment to quality control and teamwork, plays a central role. This, once again, also happens to be the case in the current controversies regarding Industry 4.0 and the project of advanced manufacturing where ‘smart’ digital technologies are reshaping work organization and production.

Industry 4.0 and the smart factory: flexibility, digitalization, and automation revisited

The project of Industry 4.0 originated as an attempt to achieve hegemony in global manufacturing by enhancing a new wave of automation made possible by the potential of applying digital technology to production processes. The challenge was launched at the heart of European industry by Germany, the leading manufacturing country of the block, and is aimed at playing a more central role in global competition based on innovation, thus attempting to overtake the prominence of the core US tech-giants and specifically GAFAM. While many of these tech-giants have their directional centres in the core regions for innovation, they have offshored the material base of their production chains, such as the hardware components for computer-based technologies, to semi-peripheral and peripheral countries (Fuchs, 2014; Sacchetto and Andrijasevic, 2017).

The Industry 4.0 project aims at increasing the competitiveness of the core German multinationals through the integration and coordination of various components of the production processes within the labour process, as well as in relation to all of the actors involved in the global production chain. Furthermore, it aims to not only establish itself in a leadership position, by improving the competitiveness of its factories with 4.0 technologies, but also to build a world-wide leadership role in the design and export of this technology (Forschungsunion and Acatech, 2013).

In relation to the application of the project, Industry 4.0 technologies are mainly ‘connectivity’ tools developed in response to the increasing specific

needs of integration that characterize the contemporary network structure of industrial production. One of the main effects of the growing productive specialization and fragmentation of the modern factories has been the process of outsourcing the production process. As a comparison, while about 75 per cent of the production process was directly internalized in the Fordist factory model, just 25 per cent of these activities are internalized in the Toyotist factory model (Antunes, 2012). This means that the coordination in time and space of the value chain is a key function for attaining the current global standards of competition.

Industry 4.0 aims to achieve its goal of totally integrating both the *vertical* axis, between management and employees, and the *horizontal* axis, between the various production and distribution chains. New developments in ICTs, such as the Internet of Things (IOT), allow for the creation of so-called Cyber-Physical Systems (CPS) that merge software components designed for real-time data gathering and monitoring with hardware devices that are directly incorporated at various levels (that is, the plant and the shop floor, in production tools, components, and products). The amount of data generated in CPS makes it possible to monitor and control every single moment and operation that forms part of the 'assembly line'. The huge amount of information and data recorded can be processed by *Big Data* and *Cloud Computing*, assessing the work and productive performances of employees, with the potential of eventually intervening directly in the process.

The principles of Industry 4.0 were mainly conceived in response to the current conditions of global competitiveness that require resource efficiency, short development periods, individualization on demand, flexibility in production, and the decentralization of processes (Lasi et al, 2014). In this sense, Industry 4.0 is a technological upgrade of lean production, just-in-time and WCM organizational principles, aimed at dealing efficiently with the imperatives of connectivity. What is more, the technological innovation of Industry 4.0 must be considered as a reformulation of the classic relationship between technology and work in this new phase of innovation-driven capitalism. This new scenario raises new questions regarding autonomy and monitoring of work, the management of processes of skill upgrading or deskilling processes, the role of collective bargaining in the processes of technological implementation, and information management.

The role of emerging automation technologies in shaping a new organization of work is visible not only in production but also in key services for highly integrated global value chains like logistics. Indeed, this sector is central to the debate, given the key role played by connectivity in ensuring the efficiency of its production chain. Not only is logistics important for distribution, but it is also essential for production itself. The interconnection between the mass expansion of e-commerce and the new forms of automation in warehouses is well-illustrated in the case of Amazon, the biggest Internet

company in the world. The organization of its ‘fulfilment centres’, which store the commodities sold on its websites, is indeed increasingly structured around new forms of robotization, which respond to the new logics of digital Taylorism based on datafication of work and its algorithmic translation. However, if one analyzes the innovation patents owned by the company, it becomes clear that the process of automation put in place at Amazon warehouses is once again not totally aimed at substituting human work; rather it transforms it into an appendix of the complex technologies and machineries that can, at the same time, both increase worker surveillance as well as the intensity of work, thus achieving *humanly extended automation* (Delfanti and Frey, 2020).

Other studies undertaken at Amazon warehouses have shown not only the potential but also the limits of this new organization of work based on algorithms. While at a managerial level the principles of productivity in some cases take priority over other principles of quality and safety (as seen in the ‘Prime Day’ season), processes of task standardization vary among types of workers. The new regime of algorithmic constraints is still limited, leaving space for opportunities for workers to adjust their practices and perform with some autonomy (Massimo, 2020).

The high volatility in the flows of commodities linked to e-commerce is another critical aspect that poses challenges for the advent of full automation. Even though tasks are increasingly standardized, they are still too complex to be performed by robots in the warehouse. This is before we even get onto the question of home deliveries to customers. In this highly bureaucratized workplace, a conspicuous part of the tasks is, thus, grounded in the tacit knowledge of workers. Moreover, in different logistics sectors, the high oscillation in the volumes of orders and deliveries depending on the specific part of the season (defined by increasingly limited commercial campaigns), requires the use of a temporary, ‘on-demand’ workforce that corresponds to the logics of ‘just-in-time’ delivery (Bologna and Curi, 2019). Labour-saving strategies, such as the outsourcing of parts of the workforce, is a standard practice for many logistics operators. As a result, platformization is becoming more common, since it makes it possible to outsource parts of the chain through subcontracting. This means cost savings linked to fixed capital and to human capital, in some cases bypassing specific contractual frameworks, such as blockchain-based platforms for managing international services involving a coordination of actors along the whole supply chain.

Beyond fragmentation: recomposing labour in the new world of work

The new automation that has been made possible by the increasing integration of Artificial Intelligence Systems, IOT, Big Data and Cloud Computing, which are at the core of Industry 4.0, are simply the technological extension

of classic strategies of cost-reduction and labour-saving (Pianta, 2020). The initial projects of high automation enacted in response to the first productivity crisis in the 1970s failed, as can be seen in the case of the Italian, German, and US automotive industries. However, strategies aimed at automating parts of the processes as well as decomposing and rationalizing them into smaller units of production are still present, although they have been combined with significant elements of flexibility linked to the organization and human factors on which lean production and WCM are based.

It is still necessary to develop an analysis of the specific implications of technological processes on work organization and their potential to reshape worker autonomy and monitoring. However, it has been shown how the implications of technological innovation on the workplace or at the company level cannot be restricted to a singular unit. The network structure of the modern factory in global value chains and in highly integrated productive nodes requires new, integrated forms of collective bargaining, in order to avoid company-level bargaining and a focus on the supply chain (Gaddi, 2018).

In this sense, the network structure of these new companies requires innovative ideas in order to develop a collective organization of labour that takes into consideration the effects of technological implementation and organizational structuration on every single productive unit in terms of productive returns, benefits, and risks. In the context of contemporary advanced industries, worker organizations and unions need to face the challenge of effectively negotiating the managerial designs and plans inscribed in automation and machine-based flexibility. These aspects have an effect on the shaping of technological innovation, due to the fact that technology is a social design. Depending on how it is negotiated and shaped by a plurality of actors with different interests and values, technological innovation has different implications on the nature of value-creation and distribution, processes of deskilling or upskilling, the quality of work, and worker identity. The ‘Smart factory’ is not the outcome of a technological process, rather it is a normative definition that still needs to be planned and built.

The forms of automation found in Industry 4.0 are indeed reproducing new paradoxes at both the micro- and macro-level. At the micro-level, Industry 4.0 renews the old Moravec paradox in relation to work (Frey, 2019): while highly abstract work operations can easily be transferred to computational calculus carried out by new powerful technologies, tacit knowledge is still far from being easily translated into automated processes. At the macro-level, robotization and digitalization are clustered in specific cities and regions. As has been shown in research on the US, more than half of US robots are in ten states, primarily in the Eastern heartland, where male unemployment and life dissatisfaction are at their highest (International Federation of Robotics, 2016).

Technological innovation driven by digitalization is, therefore, far from being flat and spaceless. On the contrary, it triggers new effects of polarization and shapes new geographies. It, therefore, needs to be put in context and read as a tool with no determined and unidirectional path, as a social force that must be governed, since it can be responsible for original forms of social fragmentation and inequality. The selective rewards of the occupational structure redefined by digitalization and robotization produces a new concentration of profits (Brynjolfsson and McAfee, 2016) and consequently affects the political behaviour and conflicts of the so-called 'losers of automation' (Im et al, 2019). Far from being merely a technical issue, the question of technological innovation has a highly political relevance.

Digital labour between invisibility and platformization

The expansion of connectivity and its pervasive features has vastly reduced the costs related to the production and extraction of data from common users. Data are becoming the new key source of value, and digital platforms are becoming central to this process, since their function goes well beyond playing a merely intermediary role between the supply and demand of labour. The capacity of platforms to extract, monitor, and own data from workers and users is providing them with a central role in the current phase of digitalization. Moreover, their organizational form is reshaping labour law and employment relations, in some cases by fragmenting labour and in other cases by creating novel and ambiguous forms of employment. However, the problematization of data extraction from ordinary communication and online activities is also becoming a key issue. The following sections critically address the question of the recognition of digital labour and how it can significantly reshape the classical questions regarding the social relations of work and the nature of value in capitalism.

Redefining labour and value

Far from being purely innovative, the increasing role of digital technology in the economy and society has accelerated trends and critical issues that have always been present in the study of work and labour. The generation of profits through innovations that are conceived as cost-saving and the search for new sources of value accumulation are at the core of every technological and organizational form in capitalism. Digital technologies are merely extending pre-existing forms of innovation. These include rationalization in terms of just-in-time and on-demand work through outsourcing, specialization through task decomposition, task execution through the reduction of autonomous conception, and performance monitoring through surveillance and evaluation.

Within this context, digital labour is partly an innovative process – as it transforms every act performed by a connected individual into work – and partly an extension of previous forms of Taylorism, the principles of which have been updated for the new digital landscape. In this sense, the gig economy is as old as piece-rate work, but its specific characteristics fit many new forms of work that have been restructured by digital platforms. In the same way, digital platforms are the new forms of intermediation between the supply and demand sides of the market, which also have the potential to become data banks and convert their functions into new companies and markets, while eventually also expanding traditional forms of outsourcing.

Digital labour is a process where elementary tasks are decomposed and productive human activities are datified, characterized by the application of innovative technology and artificial intelligence to the economic sphere (Casilli, 2020). Thus, it is based on an extended version of Taylorism, decomposing users and workers into clicks or digital traces that can be recomposed and analyzed through algorithms. Beyond the technological possibilities made available by AI, the truly unprecedented implication of digital labour is the transfer of work from workers to consumers and the emergence of the unpaid labour of ‘consumption work’ (Huws, 2013).

The digital labour produced by connected workers – broadly conceived – is thus not only a source of value accumulation, but also a potential source of new strategies of automation that can reshape the nature of future work, by making it even more so an appendix of mechanical labour, or to be substituted by automated tasks. The technological landscape creates new opportunities for novel business models that reshape the limits of what work is and what the differences between subordinated work and self-employment are. Workers and data property rights are, thus, deeply redefined by the current characteristics of digital technologies, although its jurisdiction varies depending on specific legal systems.

In this sense, new digital platforms can take advantage of unregulated legal systems and further increase precarious conditions, strategically bypassing contractual constraints linked to subordination through the creation of a form of fake self-employment and by exploiting spheres of unpaid work (Pulignano, 2019). Therefore, digital labour can be seen as a way of commodifying or extracting value linked to leisure activities performed on the web related to cultural entertainment, communication, sociability, and creativity.

Online activities can also be defined in terms of capital accumulation, not only in an economic sense, but also in the broader sense of social, cultural, and symbolic capital (Bourdieu, 1979). Indeed, online contacts, friends, interactions, likes, or visualizations are a key source of profit for companies in the digital realm, who aim to exploit attention and construct new ‘audiences’ for marketing purposes. In this regard, the digital sphere is a space that

presents new forms of commodification, accumulation, and domination that interact in a specific way with hierarchies that already exist in society. In some cases, this is done by expanding existing hierarchies, in other cases by creating new ones. The centrality of these processes and their potential expansion to further economic sectors raise the issue of the recognition of such work and consequently of their implications for worker rights.

Digital technology and the new assembly line

The increasing importance of information and communication technology for capitalism has been the source of important debates that became particularly relevant with the first wave of the mass diffusion of Internet-related ICTs (Castells, 2001; Fuchs, 2010). The use of ICTs became central to the rise of the form of network-structure multinational companies competing in global capitalism, where coordination between global value chains became a key aspect of their mechanisms. At the same time, along with a structural transformation of many sectors of the economy, new forms of work emerged that were based on the management of the growing diffusion of commercial services for everyday use.

In this sense, the rise in telecommunication services in both the economy and in wider society has led to the emergence of new typologies of workers. Call centres have become key sites for understanding the implications of ICTs in the world of work, in both a real and symbolic sense, due to the types of work organization, employment relations, and conflicts that have developed in these contexts. A new wave of studies on the relationship between technology and work sociology have investigated how the new technological reconfiguration triggers new processes of deskilling and surveillance (Bain et al, 2002), subsuming a linguistic, immaterial labour (Brophy, 2017) as well as how it shapes the nature of misbehaviour and conflict at work (Thompson, 2016; Woodcock, 2017), by linking it with the new conditions of precarious and temporary work. Indeed, the call centre represents a new type of workplace where ICTs reconfigure traditional forms of work organization and control. At the same time, it also presents opportunities for global industries to find and coordinate an untapped, outsourced, global workforce in semi-peripheral and peripheral countries (Brophy, 2017).

Addressing the way processes of automation, with their canons of flexibility, affect the nature of work organization, scholars have defined call centres as 'digital assembly lines' (Head, 2003). As a new form of organization, 'digital Taylorism' further develops digital strategies of rationalization, methods of surveillance, and performance monitoring, introducing new incentive systems for worker involvement that reproduce old forms of piece-rate work (Bain and Taylor, 1999; Brophy, 2017; Woodcock, 2017).

Notwithstanding the decline of the traditional Fordist factory, the organizational form of Taylorism is far from disappearing. As has been shown in the previous sections, in the core advanced economies especially, the principles of Toyotism, lean production, and the advanced manufacturing of Industry 4.0 are reviving a number of specific aspects of Taylorism, such as the intensification of work performance, the growing elimination of time wastage, the parcelling of work tasks into more measurable units, incentive systems, and the monitoring of work tasks.

At the same time, new workplaces, such as the fast-food chain McDonald's or Walmart stores, are among the most significant examples of the updating of Taylorist principles. McDonaldization is scientific management applied to restaurants, or a one-track method to produce a service that gives standardized choices to customers, and in which efficiency and calculability are managed using technology throughout the whole process of food production and services (Ritzer, 1993). Walmart developed its model following increased pressure by suppliers for low prices in exchange for high volumes of sales. An important part of the model sees a regular workforce with low salaries and benefits alongside an ever more temporary workforce with even lower wages, which is thus less likely to become unionized (Janoski, 2015).

The characteristics of digital Taylorism extend to completely new job specific dynamics that have come about due to the implementation of Taylorism at different levels. In the case of knowledge workers, this has been described as a process of categorization and routinization of jobs that detracts from the 'permission to think' and thus prevents workers from 'engaging their brains': an intertwined process of increasing restrictions in specific areas of work where the forms of conception get replaced by executive tasks (Glover, 2013). In some cases, digital Taylorism is applied through the latest digital technologies, such as apps and algorithms, that correspond to the function of the assembly line, while at the same time making it possible to monitor worker performance automatically and comprehensively, evaluating their location, operations, and goal attainment in real time (Staab and Nachtwey, 2016). New techniques of data mining, extraction, and analysis make it possible to constantly monitor and update worker profiles and to obtain potentially ever-growing documentation on them. Moreover, unlike the mechanical Taylorism that was applied in Fordist factories, which required labour to be concentrated in a physical space, digitalization makes it possible to measure working tasks remotely (Brown et al, 2011).

Therefore, it is evident that new digital technologies have the potential to reshape the nature of work. At the same time, however, former organizational forms, such as Taylorism, can also be applied to these new spheres of work, from the Industry 4.0 factory to digital labour, from crowdwork to platform-based, on-demand work.

Conclusions

In order to look at the rise of platform-based (digital) work as an extension of previous forms of technological innovation it is necessary to consider their function in terms of profit maximization, through multiple forms of cost-saving and value extraction. From this perspective, labour fragmentation and outsourcing are two traditional forms that have been updated in the new phase of digital platform economy. The opportunities of connectivity that have been made available by digital technologies make it possible to perform work tasks with relatively low financial inputs, as all that is needed is an Internet service provider and a technological device to receive and send information. These aspects favour the diffusion of new opportunities for on-demand work and services, while at the same time reshaping old ones. Thus, digital platforms allow for the expansion of new areas of the gig economy for a variety of typologies of worker, from highly skilled self-employed professionals in the cultural and knowledge sectors (seen in platforms like Upwork), to manual service workers (Taskrabbit), to unskilled workers in sectors such as delivery (Foodora, Glovo, Deliveroo) or mobility (Uber).

The rise of the crowdwork sector on digital platforms, in particular, poses new questions regarding the transformation of the workplace, the changing nature of work relations, and employment regimes (Huws et al, 2016). Firstly, the displaced nature of these jobs transforms and, in some cases, bypasses the need for labour concentration in the traditional physical workplace. Secondly, the growing social isolation of workers goes hand in hand with the individualization of increasingly fragmented and parcelled tasks. Atomization negatively affects the opportunity to acquire skills as well as build new relationships within the social environment of work. This in turn makes it increasingly difficult to exchange and share work-related problems and concerns, let alone raise claims with management or the employer in a collective fashion.

The nature of employment regimes is therefore critically reshaped by the rise of platforms. Platformization can be read as both a continuation of previous forms of intermediation that matched demand and supply of the workforce with the outsourcing processes of working tasks, as well as an innovation that challenges existing forms of business models through new algorithmic tools of data extraction and elaboration, and employment relations. In fact, digital platforms have an indefinite and shifting nature, and their function can be related either to a market or a company.

The so-called platform economy is a new way of organizing labour services in which the new digital platforms not only create a space for communication and intermediation between work demand (companies) and supply (workers), but they also have the power to redefine specific relationships between them

(De Stefano, 2016; Van Dijck et al, 2018; Vallas, 2019). Platformization is, in fact, not simply an autonomous process triggered by a new actor – such as the platform – but a new form of intermediation that uses digital infrastructure to connect many other traditional actors involved in the process of social and economic transactions, such as employers and employees, intermediary professionals, as well as consumers and clients.

The spread of digital technologies and social network systems has transformed the way we produce and consume information and communication content. In this new panorama, Facebook or Instagram are social media platforms marketing information on everyday life and sociability; Google is a search engine and a platform to process user information, as well as to host and sell advertisements; Spotify is a search engine that marketizes access to resources and goods such as music; Foodora, Glovo, and Deliveroo are matchmaking platforms for food-delivery, matching dealers with couriers and consumers; Airbnb is a platform for house renting that puts clients and hosts in contact; Amazon Web Services is a cloud platform that hosts information about products, producers, dealers, and consumers; Taskrabbit is an online marketplace that matches up the demand and supply of work and services (Casilli, 2020).

It can be seen, therefore, that platforms are companies with a high level of flexibility, since their main sources of value is the data produced by all of their users (employers, workers, consumers). At the same time, this polyvalent nature allows them to convert the data and functions accumulated in one sector in order to reinvest them in other economic areas. This is because legislation on digitalization is still in the process of being drawn up. Thus, in order to take the first step towards an initial regulation of these hybrid tools, which can be either markets or companies, it is essential to recognize the property rights of data produced through the process of connectivity itself.

Furthermore, debates on the role and definition of platforms often consider their multidimensionality. Indeed, platformization can not only be considered to be a real or imagined form of work in the current expansion of digitalization, redefining the existing nature of work and its organization, but in doing so it also triggers the potential for the platformization of work and services in the future. The monitoring and surveillance technologies that shape platforms treat the workforce or users as potential data-sources on whom new forms of automation can be experimented. These then have the potential to, firstly, substitute specific tasks and, therefore, workers with technologies, and, secondly, to update and increase the power of platform algorithms to shape their descriptive and predictive power.

Depending on the type of work, digital platforms are updating dilemmas regarding automation and human labour that have been at the core of capitalism since its origins for the new technological conditions. Innovations

in digital technologies have only expanded dynamics of rationalization that are inherent in regimes of capitalist competition. Nowadays, digital technologies as a tool for profit maximization through cost-saving are still conceived as a means to extract value from digital labour. However, automation is still far from substituting labour performed by humans. New forms of automation in digital platforms specialized in data analysis still require a ‘workforce of the clicks’ that perform specific tasks, like updating specific routes on maps created by geolocalization devices, gathering information and transcribing texts from images for travel platforms, or producing views and likes for fashion-related contexts. Thus, humans are constantly performing tasks that artificial intelligence cannot carry out, since constantly changing human behaviour is at the core of digital business.

Furthermore, in many service sectors, automation has simply transferred specific tasks from workers to users/clients. In this sense, digital labour must be read as a continuum from activities that are unpaid to activities that are underpaid to activities paid as ‘gigs’ or fragmented to flexible forms of activities (Casilli, 2020). Rather than only incorporating work in machines or technological artefacts, automation is simply rendering some working activities invisible, thus hiding sources of value extraction and accumulation.

Platformization is making forms of dependency invisible by avoiding the recognition of the responsibility linked to the status of employer, through the use of rhetorical sleights of hand and exploiting the lack of legal regulation. Uncertainties about the definition of the new digital landscape are both intrinsic in its constantly evolving nature, as well as being further exacerbated by specific frameworks of labour deregulation that have been put in place over decades of neoliberalism. The platform-based gig economy thus evolves according to the specific context of legal regulation regarding temporary jobs and atypical employment. Therefore, in the case of the UK, the gig economy has built on forms of labour legislation such as ‘zero-hours’ contracts or ‘jobs on call’, while in Germany it has been developed within the context of the famous ‘Minijobs’ and ‘Midijobs’ (Crouch, 2019).

While flexibility of value in the new digital platforms is common to all working sectors (as a task performed and as data produced through connectivity), the implications of digital platforms vary according to the sector, displaying different forms of risks and benefits. Some platforms distinguish virtual work qualitatively, based on the knowledge content it produces, thus distinguishing between *makers* (those involved in activities requiring professional skills) and *doers* (unskilled workers performing standardized and qualitatively low tasks). Although they are exposed to some similar processes established by platform industries, such as outsourcing risk, datafication, invisibilization of forms of work, social isolation, and identity misrecognition, there are huge differences in the socio-economic status and in the working experience between highly qualified sectors like software

engineering or AI experts on the one hand, and Amazon Mechanical Turk or generic click workers on the other.

Far from being novel, these new lines of separation proposed by platforms are simply reproducing old forms of polarization between skilled and unskilled workers at previous stages of the (knowledge) economy, which can easily be reshaped by new organizational and technological innovation. The rise of new technological industries in semi-peripheries and peripheries of the world has thus not only opened up new opportunities for tech-giants of the core countries to outsource highly complex production processes but it has also increased global competitiveness, challenging workers' professional (marketplace) bargaining power (Silver, 2003).

The fragmentation (or 'taskification') of work introduces a new definition of *human as service* (Prassl, 2018): an outsourced on-demand precarious, atomized workforce, that is distributed in global value chains dependent on contingent online work, managed by algorithms, paid-for micro-tasks, through piece-rate micro-remuneration, and thus exposed to social and economic risks. Professionals, on the other hand, are still recruited to perform complex tasks that require high skills and that are organized through 'projects', requiring personal and qualitative investment. However, the tendency for workers to be framed as freelancers and self-employed exposes them to economic and social risks linked to the growing exigencies of the company for flexible adaptation that opens up space to expanding areas of unpaid labour. This also has the result of dismantling specific labour rights, exposing them to precariousness.

However, far from falling into the realm of necessity, the invisibility of work and employment relations, worker atomization, and the displacement produced by digitalization are all conditions subjected to contradictions. Freelance professionals are, for example, dependent upon co-working space to overcome the individualization and social isolation of their working conditions, and these needs of sociability and principles of collaboration have inspired the first projects of co-working practices based on communitarian 'sharing' principles. They have, however, at the same time been strategically latched onto by employers as a justification for reducing their responsibilities and duties, while at the same time the need for sociability and communication have become marketized by an ever-growing business sector (de Peuter et al, 2017). In parallel to all of this, notwithstanding the new digital opportunities, crowdwork is never fully displaced and still remains dependent on specific locations, while individualization is never fully exempt from interactions with peers, company or platform managers, both in the case of professional freelancers (Schwartz, 2018) or in low-skilled workers like Amazon's Mechanical Turks (Gray et al, 2016).

In this sense, beyond post-modern accounts that deterministically define the end of traditional forms of labour conflicts, total atomization and total

individualization of workers is difficult for digital platforms to achieve. Firstly, spaces for communication and ties with potential colleagues or collaborators are still a key factor that may explain the rise of critical tendencies towards collective organizing and new forms of labour agency. The new ICTs are also potentially extending the sources and means of communication that can become means for collective grievances, organizing, and protest. Secondly, flexibility and automation are intertwined with social dynamics that need narratives to be justified and effectively accepted. Far from being a purely discursive device, however, they contribute to creating social representations and meanings that are performative and thus play a role in shaping specific identities in relations with the new technological environment. In this case, digital innovation is a discursive repertoire that works to create a system of motivations and beliefs regarding a state of things around work that has both ideational and material effects. The long story of labour shows how relations with technology are thus as much linked to material and structural dimensions as they are to ideational ones. Even though digitalization has reshaped the definitions and the relationships between individualization and collective action, the acceptance or the capacity to change specific conditions is part of the critical and agentic nature of work. However, the definition of the centrality of workers agency highly depends on the capacity of workers to define their own identities before the specificity of any claim or interest.

Challenges to Collective Action in Digital Work

Defining digital work

Having defined the general conditions of platformization in the previous chapter, in order to understand the emergence and the various forms of these new categories of workers, it is now necessary to distinguish the specific challenges and opportunities of various types of digital labour. If the pivotal role of digital platforms as the intermediating infrastructure, able to allow a wide array of users to interact with each other with the aim of extracting data and producing various forms of value, is not questioned as an essential feature of digital labour (Srnicek, 2017; Casilli, 2020), some divergence still persists today in relation to a number of other defining features.

The main disagreement concerns the presence of an explicit economic relationship, that is, the attribution of a monetary remuneration: some scholars only identify digital labour with platform-mediated activities involving some form of remuneration (Huws et al, 2016; Wood et al, 2019; Aloisi and De Stefano, 2020), while others do not see remuneration as a fundamental feature (Fuchs, 2014; Casilli, 2020). According to the first group of scholars, digital labour is the set of paid activities, organized and controlled by online platforms (Huws et al, 2016). According to the second group, it comprises the broader set of activities whose processes of data extraction ('datafication') serve to develop automatic learning and train artificial intelligence (Casilli, 2020). In the latter definition, therefore, digital labour encompasses a vast array of platform-mediated activities, located on a continuum ranging from unpaid and underpaid activities to flexibly remunerated activities. For these scholars, the *generated content* and the *generated content classification* activities that users perform on social networks are, for instance, a key component of digital labour, which they define as

‘social labour on the net’ (Casilli, 2020; see also Fuchs and Seignani, 2013 for a similar interpretation¹), the datafication of which generates economic value. As Casilli (2020: 80) puts it: ‘users’ creations, behaviours, and data are routed through digital technologies in value-producing activities. These activities are forms of labour inscribed in social relations, as their [economic] value derives from users’ interactions and cannot be conceived other than as a collective act’. Regardless of whether one accepts such a broad definition or not, no significant or explicit form of collective organization, or even alternative forms of networking, has been adopted by users so far.² Therefore, given the ‘worker mobilization’ standpoint of this study, these activities will not be dealt with here. Instead, this work will consider all the other forms of digital labour, even those that have only witnessed embryonic modes of collective organizing.

It will be argued that platform workers have been developing various forms of collective association, as the platforms for which they work not only act as intermediating infrastructures between them and their clients, but also, and above all, as those platforms structure an antagonistic relationship of dependence between the workers themselves. Building on the concept of ‘structured antagonism’ developed by Paul Edwards (1986), according to which a permanent conflict between employers and employees is intrinsic to the capitalist labour process, several authors have readapted and applied such a concept to the platform economy (Gandini, 2019; Tassinari and Maccarrone, 2019; Wood and Lehdonvirta, 2021). In these interpretations, digital platforms establish a structural power relationship with workers by simultaneously generating dependence and determining the rules that shape, afford, and limit worker agency.

More specifically, Wood and Lehdonvirta (2021) identify three interrelated forms of dependence between workers and platforms, conceptualized as: 1) network effect; 2) data lock-in; 3) no work outside of the platform. In the first form, the platforms trigger a high network effect, in the sense that their monopolistic tendency allows them to find (and lock-in) the majority of the high-quality clients in the sector in which they operate, so that workers have little option but to use such platforms. In the second form, by placing themselves as an intermediary, platforms are able to collect data on the behaviour of their users. These data are highly influential for workers, as they contribute to defining their online reputation or score, which is the essential feature of their work. However, workers cannot take the reputation or score gained on a specific platform (and the underlying data) to another platform. As for the third form, platforms do not allow workers to connect with clients outside of their circuit: they do not display the full names of users, and automatically screen communications to block contact information and links to other websites. These techniques are buttressed by exclusivity clauses in the terms and conditions of the platforms, which prohibit workers and

clients from engaging in business together outside of the platform.³ Overall, the combination of these features creates a vertical relation of economic dependency between the platforms and their workers. This dependency means that the consequences of ending employment are potentially much more severe for workers (that is, the loss of their livelihood) than for the platforms (that is, having to replace the workers).

As recent research has pointed out (Gandini, 2019; Tassinari and Maccarrone, 2019; Wood and Lehdonvirta, 2021), the dependency of platform workers also generates a new form of structured antagonism, which may spur on processes of collective organizing and politicization among workers. Indeed, the verticalization of power that is intrinsic to the dependency relationship between platforms and workers may render the political nature of such relationships more clearly visible to workers. In this sense, digital platforms may become a centralized target of contestation for the workers. If, on the one hand, such relationships of dependency do create a form of quasi-total control over workers, on the other hand, it also helps to single out the target of the conflict. This is a political element of the labour/employment relationship that had partly become lost in the era of post-Fordist financialized capitalism (Crouch, 2019).⁴ In the case of food-delivery courier mobilizations, which are currently spreading throughout Europe (Heiland, 2020), the use of an algorithm as a vertical form of organization of the labour process is said to facilitate the identification of the central locus of the control (and exploitation) that they experience and, consequently, this increases the potential for organizing collective action against it (Erne, 2017).

At first glance, this argument might appear counterintuitive in relation to the common assertion that algorithms de-personalize and obfuscate the nature of control in the labour process, making the managerial figure invisible and thus opposition difficult to organize. However, in a paradoxical sense, the de-personalized nature of algorithmic control might, in fact, even help these workers to conceive of themselves as subjects subordinated to a collective labour process, because it reveals the general and uniformly arbitrary dynamics of operation of technological devices used for the control of the workforce. In this sense, the lack of regular interaction between management and platform workers under the platform architecture may not only trigger grievances, but also makes it more likely for them to escalate (Lei, 2021). Indeed, the manifestation of forms of algorithmic control which are ‘generalized’ and impersonally arbitrary, therefore, makes it possible to overcome the dynamic of individualization that characterizes ‘post-Fordist’ employment relations, based on autonomy and self-discipline, while also facilitating a potential generalization of conflict and of demands (both trans-platform and trans-nationally). It is obvious that we are faced with an ambivalent process here: the collective organization of workers can either emerge or not, it is not a necessary process. But it does not seem to be a

coincidence that the various multinational platforms (Glovo, Deliveroo, Foodora, and so on) that operate through these algorithmic means of control are becoming the central targets of emerging worker mobilizations. More generally, it has been noted that if digital platforms are those firms that control and use algorithms, then they will be the targets of mobilization because they are the new visible ‘bosses’ in platform capitalism (Aloisi and de Stefano, 2020). What is more, the absence of supervisory relationships between management personnel and workers may contribute to the creation of free spaces available for mobilizing solidarity and collective action (Lei, 2021).⁵

As a result, the emerging tension between digital platforms and their workers seems to epitomize the new form of structured antagonism in platform labour. In other words, digital platforms constitute new ‘points of production’, meaning that they are new workplaces where the (capitalist) labour process is enacted upon workers (Gandini, 2019), giving rise to an original form of conflict between employers and employees. Seen from this perspective, platforms now embody the site where the social relationships of production take place and, therefore, where a new capital/labour dialectic of control and resistance occurs (Hebdon and Noh, 2013). In this study, such antagonistic features of platform labour are considered as the starting point of the analysis aimed at explaining digital worker mobilizations.

If defining digital work seems controversial, there is, on the other hand, a greater level of consensus on the criteria for its classification. Indeed, scholarly literature widely agrees on two defining criteria upon which a specific typology of digital labour can be built: 1) the location of the work delivery; 2) the skills required to perform it. With respect to the location of work delivery, the distinction is between virtual and physical work delivery. More notably, some activities are both managed online and carried out online, and thus may be delivered to clients anywhere in the world (global). By contrast, other activities are managed online but are carried out offline, and therefore they are rooted in labour markets that are spatially and physically localized (local) (Huws et al, 2016). The first type of activity is called ‘crowdwork’, while the second is referred to as ‘work on-demand via apps’. Similar conceptualizations refer to them as ‘remote gig economy’ and ‘local gig work’ respectively (Wood and Lehdonvirta, 2021) or ‘microwork’ and ‘digital labour on demand’ (Casilli, 2020). Concerning the skills required to perform the work, one can distinguish between high-skill activities (providing creative or IT services) and low-skill activities (involving short, repetitive routine tasks, or click work). By comparing these criteria, one can build a typology for (paid) digital work (see Table 3.1).

Any effort by each of these digital labour forces to organize themselves collectively faces specific challenges and dilemmas. Crowdwork and work-on-demand workers have, in this respect, more differences than commonalities with non-digital workers⁶ (Heiland, 2020). The characteristics

Table 3.1 Types of digital work

	Online/global work delivery	Offline/local work delivery
	Crowdwork (remote gig economy/microwork)	Work-on-demand via apps (local gig work/digital labour on demand)
Low-skilled	Mturk	TaskRabbit, Uber, Deliveroo
High-skilled	Upwork, 99Design, CoContest	TakeLessons

Source: Adapted from [De Groen and Maselli, 2016](#)

of the labour process, the skills required to accomplish the working tasks, and, more broadly, the social and cultural environment in which digital workers are placed, heavily shape their resources and opportunities for collective action ([Cini et al, 2021](#)). Consequently, both this and the following chapters will focus on these two macro-categories of digital work.

Fragmentation processes in digital work

Most of the obstacles to the collective organizing of workers in the platform economy stem from specific processes of labour fragmentation that the digital intermediation of platforms, either directly or indirectly, induces. Here, fragmentation is understood as the active isolation or the prevention of collectivization of workers ([Huws, 2014](#)). More specifically, five processes of fragmentation have been identified in platform labour: legal, technological, organizational, spatial, and social ([Heiland, 2020](#)).

Legal fragmentation

Legal fragmentation means the individualization of the contractual relationship between digital workers and the platform for which they carry out their work tasks. Most of these workers have non-standard positions, with few or no labour rights. Platforms are able to avoid employment relationships and laws, making collective bargaining impossible, as this recourse is only available to workers who are employed as staff. More specifically, if platforms are threatened by extant legal norms and regulations, they are likely to relocate their activities to other locations by means of ‘regime shopping’ ([Zwick, 2018](#)) or they might resort to ‘disrupting regulation’ in the country in which they operate ([Collier et al, 2018](#)). The latter strategy is, for example, adopted by Uber, or in Italy by Amazon logistics, where the use of service providers and consequently the fragmentation of contractual standards makes it possible to regulate delivery work with different frameworks (agri-food,

postal, and so on). Thus, as one worker interviewed noted: “When we started to enter the sector, there were all types of contracts: trade contracts, agri-food, agroindustry, postal contracts. We started, slowly, to say that the only contract was the one in logistics, because Amazon already applied that one to its employees” (ID8). The option to use different contractual standards is mostly linked to cost-saving strategies, which are more effective when technological innovation allows for new jobs to be created, and thus the absence of unanimous legal procedures and regulation make it possible for the employer’s discretionary strategies. These strategies are also quite widespread in other sectors that have been reshaped by platformization. In the sector of local work delivery, platforms such as Uber, Foodora, or Deliveroo seek to maximize flexibility and minimize labour costs by calling on and paying workers only for the specific time span needed for the task to be performed. There is also a form of bogus self-employment, whereby workers, who are to all intents and purposes under the managerial control of a platform, are accorded the formal status of self-employment (Crouch, 2019). Each company ‘claims to be a database via which supply and demand are matched. The companies argue that they do not have any control over workers, and therefore they are classified as self-employee’ (Todolí-Signes, 2017: 11).

In doing so, the platform maintains tight control over its workers, while presenting them as self-employed, free individuals, with no formal dependence on an employer, but also without the protections of health and safety, rights to various kinds of paid leave, and rights to employers’ contributions to pensions and social insurance. Whenever workers demand a standard employee contract, platforms threaten to leave the country or place of activity where such a conflict arises (Tassinari and Maccarrone, 2019). In this sense, they are contributing to the creation of a situation of legal fragmentation in the sector. As a result, most of these workers appear to be legally individualized monads and not a social group with the capacity to act collectively.

Technological fragmentation

The process of technological fragmentation goes hand in hand with this trend of legal isolation. Strictly speaking, technological fragmentation refers to the individualization of work tasks as both the result of and precondition for the adoption of digital technologies in the labour process. These technologies allow for new modes of standardization, decomposition, quantification, and surveillance of labour – often through forms of (semi) automated management, cooperation, and control. Among these, the most groundbreaking is the algorithm, the use of which by platform companies has significantly transformed both the form of managerial control and the work organization.

In this respect, the sector of local work delivery is emblematic. Every choice made by these platforms, from the assignment of ‘gigs’ to the management of shifts, is established by an algorithm, which is used by the company as a ‘neutral’ and ‘objective’ instrument for time and resource optimization of work delivery but which, at the same time, makes the power relations structuring such organization invisible. Some observers have interpreted the logic underlying the management style of these platforms as a new form of Taylorism (Huws, 2014), as work is split into discrete tasks that can be measured and depersonalized, making all workers interchangeable; as a result, workers lose control over the labour process and timing, which the app can easily monitor (Casilli, 2020). Some scholars have put forward the concept of ‘digital Taylorism’, pointing to the transformation of work organization in terms of high standardization, quantification, decomposition, and surveillance, derived from the combination and application of various forms of software and hardware in the labour process (Altenried, 2020). In this reading, algorithmic management would appear to be a reincarnation of the principles of scientific management dating back to the 19th century (Bain et al, 2002; Brophy, 2017; Woodcock, 2017; Tassinari and Maccarrone, 2019). Algorithms and individually paid micro-tasks often mask a conventional employment relationship, allowing employers – as seen earlier – to circumvent basic labour protections. In sectors such as logistics, algorithms have expanded the possibility to monitor and control worker performance through geolocalization techniques. The innovation of such technologies has also made it possible to measure single delivery processes (the ‘stops’) and to calculate the effort in each route of delivery. In this regard, a standardization process is put in place that not only monitors workers but also pushes them to be pure executors of algorithmic protocols, as in the case of Amazon drivers.

More generally, the introduction of algorithms as a managerial tool has provided platforms with two advantages that were not available to traditional firms in the past: 1) vertical control of the workforce; 2) an absence of social obligations as stipulated by employment law towards it. In other words, algorithms allow control from a distance and, at the same time, mask the existence of a relationship of subordination, which in reality exists in practice, presenting it instead as a relationship of ‘collaboration’ or of self-employment. This is how novel digital devices are used by platform companies to fragment the labour process and separate workers from each other:

Huge data sets are decomposed into microtasks, a majority of which are very small jobs which can be solved in minutes or even seconds. In order for this to work and to be profitable the organisation of labour and the cooperation between a huge number of crowdworkers must be organized mostly automatically by the algorithmic architecture of

the platform. This is a division of labour and form of cooperation that works out of sight of the workers and is orchestrated automatically by the platform, a form of algorithmically organised cooperation. In order to work that way, the labour is highly standardised and across different platforms various technologies of algorithmic tracking, tracing and rating of the labour of the individual crowdworker are in place. (Altenried, 2020: 149)

This algorithmic-driven separation is especially manifested in global work delivery, but it is also present in local work delivery. While local work delivery platforms, such as Deliveroo, Uber, and Glovo, use algorithms to control and divide a precarious workforce exhibiting high turnover rates, global work delivery platforms, such as Amazon Mechanical Turk or Upwork, use algorithms to assess and transform their workers into individual agents competing for the same share of clients. At the same time, Amazon operates in logistics as a platform that uses different service providers that are charged with the legal contractualization of drivers and thus ultimately can avoid the obligations required as an employer. However, as ‘head’ of the supply chain, it has the power to impose specific agreements regarding the ownership of workers’ data. In this sense, digital innovation in the workplace also becomes the main tool for increasing worker productivity. This leads us to illustrate the next challenge for the collective organization of digital workers, that is, their organizational fragmentation.

Organizational fragmentation

Platform workers are not only physically or virtually separated from each other in the labour process, but they are also increasingly put in direct competition with each other over the completion of their working tasks and services. Organizational fragmentation means the individualization of workers’ performances, the evaluation of which is used by platforms as a disciplining mechanism aimed at both monitoring workers and increasing their productivity. In fact, ‘most platforms have a rating system for their workers. Often the platform will decide automatically or let the customers decide whether a task is done successfully and rate workers accordingly’ (Altenried, 2020: 150). In particular, the adoption of algorithms has allowed for new disciplinary practices based on the monitoring of work hours (Wood, 2020) and the management of worker performance through customer ratings. Accordingly, worker control has shifted from managers to clients, who may not even be aware of how their comments are being used. Through the threat of deactivation for underperformance, low ranking, or troublemaking, the algorithmic management of workers determines new forms of dependency and insecurity.

This process is visible in sectors such as last-mile urban logistics, in which Amazon is increasingly assuming a central role globally. As a direct effect of the massive spread of e-commerce, the new services of parcel delivery have been dramatically reshaped. The 'Amazon model' refers to a growing process of platformization, not only of consumers, but also of workers, who are thus employed through different contracts by several service providers that work for Amazon. Thus, while delivering parcels ordered through the online platform of the Seattle company, drivers are not employed by Amazon, although most parts of the labour process are regulated by the company through algorithmic monitoring and data property. As comments, reviews, and rating are carried out by Amazon users, an important component of the working relationship is closely related to the logics of the company.

This workforce governance is intrinsic to the rise of platform labour, although it is more pronounced in online work delivery. In this sector, worker dependency has been displaced from the worker-client relationship towards the new sphere of worker-platform relationships. Central to this form of dependence is the value of the 'platform reputation' that workers seek to maximize, namely, the visibility that they are able to gain on the platform with which they have a working relationship. Workers are rated by their clients following the completion of tasks. The workers with the best scores tend to receive more work due to the preferences of clients and the platform's algorithmic ranking of workers within search results. Workers with strong platform reputations can easily replace clients and gigs which come to an end. In short, getting clients is thus dependent on having such a reputation.

By contrast, the threat of negative feedback, which hurts future earning ability, is intended to discipline workers and disincentivize any opportunistic behaviour they might undertake on the platform (Lehdonvirta, 2016). As a result, reputational damage represents a new significant source of economic insecurity; what Wood and Lehdonvirta (2021) term 'algorithmic insecurity'. This insecurity derives from the fact that the reputation of workers is locked into the platform for which they work, as it is associated with data that are exclusively generated by said platform. Platform reputation is thus the direct effect of the algorithmic control of the platform, operating either to filter work away from those with low ratings, as in the case of global delivery work, or simply to deactivate their account, as in the case of local delivery work (Wood et al, 2019). Seen from this angle, the real aim of platforms is not to match individuals (workers and clients) with each other, but rather to reproduce a relationship of workforce dependency.

Spatial fragmentation

Another defining feature of digital labour is work delocalization (Casilli, 2020). Platform labour is delocalized in the sense that the unified working

space is broken up and multiplied according to the number of workers. Spatial fragmentation can be defined as the process of geographical dispersion of workers, which has been made possible by the introduction of digital technologies into the organization of work that allow for a process of 'work modularization', with a division of labour into small and simple tasks (Huws, 2014). This process has undoubtedly allowed for the geographical decentralization of the workplace and, therefore, of the workforce, along with its contractual fragmentation (Aneesh, 2009; Gillespie, 2014). In sum, 'work processes are modularized, and this modularization makes possible a wide range of different spatial and contractual permutations and combinations: aggregation or disaggregation; centralization or decentralization; labour processes based on single tasks or multiple tasks' (Huws, 2014: 95).

These processes form the basis of the current trend of work casualization. The 'dispersed geography is used against workers', making it difficult 'to both organise place-based struggles for worker rights (for example picket lines) and enact solidarity with fellow workers on the other side of the planet' (Graham et al, 2017: 153). Platform labour is still located somewhere and is bound to specific spaces (Anwar and Graham, 2019). However, the individual spaces of factories or offices, where most working conditions were once located, have been replaced by platforms as factories without walls, which can encompass either entire cities or even the entire globe. This fragmentation heavily affects both global and local delivery work, although in different ways. While online delivery work is dispersed globally, meaning a specific job can be fragmented into multiple tasks located in different regions of the world, offline work delivery is only dispersed locally, namely in a delimited urban space, such as cities, hubs, or ports.

With the emergence of global work delivery, some scholars have hypothesized the advent of a new international division of labour for which the gig workers in the Global South are given labour-intensive micro-tasks complete with a very little or no remuneration (Gray and Siddharth, 2019), while the capital-intensive companies and high-skilled workers of the Global North benefit from such labour by advancing processes (or the rhetoric) of technological automation (Casilli, 2020). The outsourcing of digital labour to the Global South is nothing new, as such; however, crowdwork shows the potential to change the geographies of digital labour. While the outsourcing of digital labour was for a long time mainly channelled by big firms handling business process outsourcing (BPO) through national branches or foreign partnerships – with the comparatively cheap digital labour found in India and the Philippines as the main hubs (Beerepoot et al, 2015) – crowdwork platforms have now begun substituting some of these flows, thereby diversifying the digital workforce of the Global South in both geographic and social terms (Graham et al, 2017). India and the Philippines

are still among the most common locations of workers on crowdworking platforms, however, overall, the geography has become less centralized (Altenried, 2020). The best known and most emblematic case of this sort of shift is that of Amazon Mechanical Turk (AMT), which employs a particular category of crowdwork whose workers are assigned to perform micro-tasks, such as identifying specific content in an image or video, writing product descriptions, or answering questions. The peculiarity of this work derives from the fact that AMT clients, normally firms located in the Global North, can refuse to pay the gig workers if they are not satisfied with the work they perform. In this sense, the massive spread of crowdwork has given rise to a globally dispersed precarious and underpaid workforce, which is most commonly located in the most socially and economically impoverished regions of the world.

With regards to locally based work delivery, gig workers are spatially fragmented and geographically dispersed in a relatively different way. Uber drivers or Deliveroo and Foodora couriers are indeed compelled to move continually throughout the city, the region, or the logistics hub, where they materially perform their work tasks. Although they might exhibit a closer physical proximity than global gig workers, on-demand workers still have limited capabilities and opportunities for coordination. Unlike Fordist workers, they do not regularly meet and work in a materially closed and delimited place, such as a factory, working in the same assembly line for the duration of the working day. In this sense, cooperation is not a core activity of their technical organization, as these workers accomplish their tasks individually and – as highlighted earlier – in competition with each other.

What is more, some traditional sectors, such as logistics, have been profoundly reshaped by digitalization as e-commerce platforms have affected delivery work, with increasingly individualized services which thus require a higher degree of flexibility from workers. At the same time, the extension of product availability through online platforms like Amazon.com has challenged traditional sectors of logistics that had previously specialized in the distribution of specific products and services. Amazon in particular, defined as the ‘everything store’ (Berg and Knights, 2019), is expanding into sectors which had previously been the domain of specific companies operating in specific market/product niches. This means that Amazon drivers might potentially be delivering any type of product. They are in this sense asked to be polyvalent, by delivering different types of products, as well as being flexible in terms of delivery time (depending on ‘peaks’ of delivery, such as during Black Friday or related to specific programmes such as Amazon Prime) – and in terms of place of delivery (though they are focused on specific zones for reasons of efficiency). Thus, as one worker noted, drivers should be considered logistic operators and

consequently subjected to the specific contractual frameworks of that category of worker:

‘We carried out our first strike because we wanted to change our contract from postal to logistic operators. There is a change in economic terms and also in terms of awareness: we are not postal operators, we are drivers. A postal operator doesn’t drive all the kilometres we do every day, and they don’t carry boxes of water up multiple floors.’ (ID5)

This interview shows how Amazon – the head of the supply chain – strategically avoids signing collective agreements and uses fragmentation and subcontracting. In the Milanese case – the most advanced and biggest area of e-commerce in Italy – Amazon drivers usually operate with specific tools provided by the subcontractors working for Amazon (vans, uniform, and so on), while enrolled on the app and monitored by the algorithms of the Seattle company. Their working activity is partly similar to that of the food-delivery couriers, since they operate and drive individually in the city, with an individual relationship with the clients and are monitored individually by the algorithm. Workers are obliged to find autonomous spaces for the purposes of organizing, as the only opportunity they have to make contact with colleagues is confined to episodic moments such as their entry into the Amazon ‘station’ in the morning to talk with the dispatcher, gather parcels, and pick up the van, or when parking the van at the end of their shift.

Overall, the challenge of spatial fragmentation can be considered to be one of the main factors inhibiting group identification among gig workers and, consequently the possibility for collective organization. However, it must be noted that such inhibition is more pronounced in global crowdwork than in locally based work on demand.

Social fragmentation

One of the most straightforward consequences of spatial delocalization is the process of social fragmentation of the platform workforce through the segmentation of these workers along class and racial lines. High heterogeneity in terms of social composition is primarily caused by the geographical dispersion intrinsic in digital labour. Unlike the Taylorist factory, platform labour does not produce a homogeneous subject. On the contrary, the digital organization of labour ‘allows for the inclusion of a very heterogeneous workforce in very diverse situations, social constellations and locations’ (Altenried, 2020: 152). Depending on the geographical areas of activity or life, workers with different ethnic, social, or educational backgrounds may perform the same labour activities while workers with similar social backgrounds may perform different labour activities. Moreover, the type

and length of the work contract also plays a role in such stratification. The composition of a part-time workforce may differ from that of a full-time workforce. This seems to be the case for local delivery workers, such as Uber drivers or food-delivery couriers. The research presented here also highlights the fact that students make up a large percentage of part-time couriers, working no more than three evenings a week in order to pay for their university expenses. By contrast, the full-time workforce is mostly made up of migrants, for whom food-delivery work tends to be their main source of income (Caruso et al, 2019; Chesta et al, 2019).

In terms of global work delivery, aside from the geographical location, a significant source of workforce stratification stems from the level of job skills required. Highly skilled jobs, identified with the new ICT professions, are generally undertaken by highly educated people, who often have a relatively high social background and live in the most advanced economies in the world. In making sense of this segment of the global digital workforce, some observers have prefigured the rise of a new creative class (Florida, 2012) or, at least, of a novel category of digital white-collar workers. As a result, one may expect that in bargaining for better professional conditions, these workers are more likely to rely on their *individual* marketplace bargaining power than on their *collective* workplace bargaining power (Silver, 2003). As emphasized by the scholarly literature dealing with middle-class professions (Szabó, 2020), this may represent a potential inhibiting factor for their potential to mobilize in collective forms in the workplace.

By contrast, low-skilled jobs, such as those assigned to the AMT workers, follow less narrow and severe recruitment criteria in terms of cultural or educational resources and are, thereby, normally carried out by lower-income segments of the global workforce, often living in the poorest regions of the world (Huws, 2014). Although these workers may exhibit a potentially high level of workplace bargaining power, their relatively high levels of turnover combined with their scant financial resources may also inhibit their capacity to take collective action. All in all, the social stratification of the digital workforce significantly impacts on its capabilities and opportunities for collective organization and mobilization. Unlike other forms of fragmentation, even though it may acquire a specific meaning depending on the workforce segment concerned, social fragmentation seems to equally affect all of the various types of digital worker categories, from the highest-skilled, online-based segments to the low-skilled and/or locally based workers.

Degrees of digital work fragmentation

Recomposing the various facets of labour fragmentation would seem to be one of the largest challenges facing these workers whenever they

Table 3.2 Degrees of digital work fragmentation

	Crowdwork	Work-on-demand via apps
Legal fragmentation	High	High
Technological fragmentation	High	Low
Organizational fragmentation	High	High
Spatial fragmentation	High	Low
Social fragmentation	High	High

(Low = low level of fragmentation; high = high level of fragmentation)

attempt to stage a political action or build collective forms of organization. By drawing on the earlier discussion, it is possible to better illustrate the degree to which each category of digital workers is confronted with the various types of fragmentation in its organizing effort. For the sake of analytical ease, this discussion will mainly focus on the two macro-categories of digital workers, that is, online work delivery and on offline work delivery, ignoring the sub-categories along the axis of high-/low-skilled job (see [Table 3.2](#)). While it is clear that such a simplification reduces the generalizability of this explanation, we argue that the levels of job skills are only meaningful to a certain extent in the contexts of worker mobilization capacities.⁷

It can be seen that legal fragmentation is as high in the on-demand sector as it is in crowdwork. Broadly speaking, in the absence of a shared legal framework, gig economy workers are individually recruited by platforms or individually interact with clients ([Aloisi and de Stefano, 2020](#)). While global delivery workers, who often work from home, tend to be employed through the loose legal framework of their place of activity, on-demand workers normally take on the status of independent contractors ([Heiland, 2020](#)). As our research on food-delivery in the Italian context has also outlined, the status (and rhetoric) of self-employed workers is fully realized and reflected in the working conditions of the couriers, which epitomize a situation of high precarity and alleged autonomy. While self-employed people can, for instance, decide when and for how long they work, choose their clients, and offer their services to as many clients as they wish, none of these conditions apply to food-delivery workers. On the contrary, in their interviews they have highlighted the fact that they experience a situation of intense control by the company that is akin to an employer-employee relationship. In the words of a courier from Bologna: “yesterday, we found out that a colleague was fired because he did not wear his uniform. This means we are not self-employed workers but employees. Though they say the opposite is the case” (IC1).

Other couriers have highlighted further problems concerning their alleged status as independent contractors. Another courier from Bologna, for instance, mentioned the fact that companies complain if a courier works for more than one platform:

‘I went for an interview for Sgnam, and I told them that I had also worked for Deliveroo, as a way to stress my work experience in relation to food-delivery. However, they immediately replied: “Look, if you only work for one company, it would be better.” In practice, if you don’t do that, they don’t allocate you shifts. This is Sgnam. If you listen to the interview with Sarzana [the CEO of Deliveroo] at *Presa Diretta* [TV show], he says that they don’t have any problem if a courier works for more than one platform. This is to build up the image of self-employment associated with this job. But we don’t believe that if Deliveroo couriers worked with Just Eat equipment they would like it.’ (IC2)

What is more, interviewees also denounce their supposed position of self-employment as they are all forced to use their own bikes, their own smartphones, buy their own helmets, and fix and solve all job-related problems at their own expense. In other words, this work exhibits all the negative aspects associated with both employee status (high control, low autonomy) and those associated with self-employed status (high personal costs). Once again it is IC2 who highlights this issue:

‘They should provide you with the duffel bag, the rain pants – which is the only useful thing – the cycling top, and the windproof jacket, but that’s really bullshit. It’s not true. In fact, we only use our own things. As far as I know, Just Eat only gives you the uniform, Sgnam only gives you the duffel bag. However, at the meeting they said: “We are going to give you x, y and z, but not for security reasons, but just because it is cool to see all the couriers in the same uniform”.’

A third courier working in Bologna, albeit employed on another platform (IC3), complained about the same problem: “they only provide you with the jacket and the duffel bag. They don’t give you any security kit. However, they officially say that we should work with this type of kit. ... Yet, it is as if I worked in a construction site without safety shoes, I get a fine”.

All in all, legal fragmentation significantly limits the formation of a shared professional identity, potentially preventing dynamics of group identification, which may lead to practices of political recomposition (Chesta et al, 2019). These dynamics are also visible in other logistics sectors, with the example of Amazon logistics, being at the same time among the most advanced and

the most paradigmatic cases (Chesta, 2021). Indeed, workers point to the fact that the mobilization process has not only recomposed an individualized workforce into a collective one, but also triggered a process of collective organizing among the service providers:

‘So, we said: the contract that should be adopted in the supply chain is the one for logistics workers and thanks to the strikes, slowly but surely, We have forced the service providers to sign the same agreements. Before, there were only four of them, but then the number increased. In the end, all of the service providers have even decided to organize themselves into an employers’ association: we signed the first supply chain agreement in October 2018 and since then, all of those who were present have agreed’. (ID8)

The use of subcontracting and the fragmentation of work through the multiplicity of service providers can be seen as a strategy aimed at exploiting the undefined nature of the work in question (service delivery but also worker skills and data monitored and recorded by the algorithms). Moreover, work is fragmented through a multiplicity of contracts that are adopted discretionally by a wide range of service providers, although, ultimately, the drivers are all working for Amazon and delivering similar parcels. As interviews with an Amazon driver (ID3) and a unionist (ID6) show, collective action targeted the company strategy of fragmentation. While Amazon quickly consolidated a dominant position in the market and is profoundly reshaping the business model of other competitors (Klumpff and Ruiner, 2021), the massive spread of digitalization and specifically the expansion of e-commerce is pushing some players to favour labour cost-saving strategies that require the workforce to become increasingly precarious, volatile, and on demand, and exposed to the oscillation of delivery peaks and troughs that are caused by new membership programs such as Prime, or specific sales periods, such as Black Friday.

Technological fragmentation is even higher in crowdwork than in the local gig economy, as online work delivery is designed to adopt the most technologically advanced digital devices with the aim of physically separating workers from each other while keeping them connected through digital networks. As various respondents have stressed in the case of the food-delivery sector in Italy, algorithms also play a key role in the process of ‘managerial automation’ of these companies, the adoption of which is perceived to have a negative effect on the conditions and performance of workers. As reported by a courier working in Turin:

‘The algorithm leads to personnel and labour cuts, and this is what all of the companies are aiming for. If instead of ten dispatchers [the shop

floor managers], you only need one to supervise the algorithm ... the company saves a lot of money. This is at the expense of job quality: no algorithm works as well as a dispatcher. It does not have a human sensibility and comprehension. It only gives orders. If a food-delivery route is 10 km, the algorithm sends you there, whereas a dispatcher plans your work schedule in a way that no courier is forced to do 10 km. In the worst-case scenario, the dispatcher sends the fittest person there, and not any random courier'. (IC4)

This is confirmed by a Milanese courier (IC5) who stated that "here you have to deal with an algorithm, not a physical person".

By contrast, organizational fragmentation does not only vary between the two macro-sectors as a whole, but also across each of them, being especially high for those work categories, such as Upwork and TakeLesson, which exhibit or require higher job skills and competencies. As noted earlier, the structural organization of their labour process imposes upon these workers harsh competition in relation to several aspects of their work activities: the goods or services they deliver, the clients they can attract, and even their own labour power. In this sense, big data are not politically neutral, but are the result of power relations embedded into a mathematical method of calculation, the algorithm, aimed at the governance, and organization of labour.

As highlighted in our research in Italy, the food-delivery sector seems to fall precisely into such governance systems, in which the organization (and control) of work by the algorithm is directly experienced by most couriers. All of the interviewees have explicitly experienced these processes of ranking and surveillance based on the calculation of various data through the platform's algorithm. In explaining the functioning of the ranking, IC3 reports how these mechanisms, which have a real impact on the working experience of the couriers, also lead to psychological illnesses (that is, addiction) by increasing the likelihood of work incidents:

'On Glovo and Deliveroo, the algorithm works according to the ranking; it is invisible, but it exists. Therefore, there is high competition. Glovo gives you a value, and you look at the value of others and you can compare. In Deliveroo, one can compare the number of working hours. For example, if you are slower, they assign you fewer deliveries. The fewer shifts you do, the fewer they give you. They have this weird meritocracy, which is associated not so much with the quality of your service, but rather with your availability to work. The ranking is relevant for two reasons. Firstly, in terms of shift attribution, because it means that where the algorithm is in charge the best shift is given to the best worker and then there is a sliding scale down to the worst

workers. ... And, secondly, for the number of working hours: the higher the ranking, the larger number of deliveries that appear on your smartphone and the more you work. ... In this regard, every evening is a Russian roulette. You go out to do deliveries as fast as possible; it is almost an obsession.’ (IC3)

A similar situation is denounced by IC5:

‘The more you work, the higher the score you achieve, in terms of deliveries, of working schedules (there are the best and the worst). Climbing up the ranking allows you to choose the best working slot. If you have a low score, you have a lower range of selection options. Therefore, we are pushed to do more and more. There is also an illusion that the faster you go, the more you can choose and the more you can manage the deliveries in a more human way. The platform says that most of the couriers can decide when and how much they work. Yet, with the ranking mechanism, you cannot really choose when to work.’

As another courier from Bologna explains, the platform ranking is intrinsically related to a practice of self-exploitation, leading the couriers to compete with each other. In his account:

‘The workers with the best ranking have it because they do a lot of deliveries, because they are desperate and work absurd working hours, which they all book when the company opens the shifts for booking. They do this not because they are assholes – even though you get a bit annoyed by this behaviour, as it creates a competition given that we are all in the same situation – but because they need to work, they are afraid of losing their score. It is a competition which pits us all against each other; the only barrier to this wild competition is mutualism, which for instance the Riders Union creates among workers. Without that, it is a war that pits everyone against everyone else: *Homo homini lupus*.’ (IC6)

Following the rationale of technological fragmentation, spatial fragmentation is significantly higher in crowdwork than in the on-demand sector, as delocalization is the quintessential feature underlying the crowdwork labour organization. In this sense, the advances in digital innovation seem to prefigure the unfolding of a new international division of digital labour, in which workers from the Global South perform productive activities for the digital companies of the Global North (Gray and Siddharth, 2019). In short, digital innovation appears to be one of the main drivers of the global

process of labour delocalization (Casilli, 2020). As our research on the Italian case of food-delivery has shown, geographical dispersion is also a key strategy adopted by the various platforms in order to spatially fragment the courier workforce and prevent them from gathering and organizing collective actions and meetings. As reported by a food-delivery courier in Milan, who was also one of the key political activists in the city:

‘The companies extended the scope for food-delivery work activities to the whole metropolitan area. In this way, they prevented the couriers from passing through their usual meeting point at the end of the working day. It also made it harder for the couriers to reach their self-organized space. After our first mobilization, the companies reorganized the delivery map of Milan. Now there is also a percentage of workers who come from outside Milan. Without meeting points, it is hard to involve these workers in our collective organization. We hold our assemblies very late in the evening [after the last daily shift], so for these people it is very difficult to take part in the meetings.’ (IC5)

Finally, it has been seen that social fragmentation equally affects all sectors, albeit in diverse forms and with different effects. In the Italian food-delivery sector, the workforce is very heterogeneous, ranging from university students who work part-time three evenings a week to older people, mostly migrants, who do as many shifts as possible, because food-delivery is their main source of income. As IC6 from Bologna, noted, full-time workers “are a significant share [of the workforce]. I know several colleagues who work for several platforms, since the income from only one platform is not enough”.

On the one hand, most of the part-time workers are men in their 20s or 30s, whose main daily activity is studying at university. As noted by several couriers (who are themselves students), the composition is “[p]erhaps not all students, but all young. ... All under 30. Most of us work to get some money without having to ask our parents for it. None of us see it as the job of life” (IC4 from Turin); or “[t]his job is mostly for university students” (IC1 from Bologna).

On the other hand, there are a significant number of migrants who work full-time throughout the whole week, while there is also a not insignificant share of the workforce who are over 50. It should be noted that the presence of migrants tends to vary from company to company, depending on the type of contract that they stipulate. As reported by another courier working in Bologna, “[s]ome platforms, such as Foodora and Food Pony, use the co.co.co. [zero-hours contract]. In these companies, half of the workforce are full-time workers, a third are Iranians, and the rest is made up by other ethnicities and some students” (IC7).

According to IC3, the ethnic workforce composition varies according to the food-delivery company in question:

‘Glovo is the only company that recruits a lot of migrants and elderly people. It takes on Pakistani people and people over 50. In Just Eat we are mixture of university students and migrants. We also have a large community of Iranians. Deliveroo couriers are relatively younger, but one third of them are over 30.’

Similarly, in Milan: “Many couriers are migrants, who have just arrived in Italy and there is also a language barrier. We have also created a chat for English and French speaking workers. The composition varies. We think that there are more than two thousand people, between bikes and motorbikes” (IC5). Based on his personal experience, IC1 (Bologna) explains why some people have chosen food-delivery as a full-time job in the following terms:

‘In these hard times, many people are forced to do this job full-time: the older you are, the higher the likelihood that you do this job as a full-time worker. This is evident. Food-delivery is predominantly youth-based but not necessarily. If you have to feed and support your family, you also have a huge amount of pressure to do a larger number of deliveries.’

Conclusions

This chapter has illustrated and discussed the main structural and political challenges facing platform workers in terms of the organizational processes of collective action. Firstly, a conceptualization of digital work was presented, on which the analysis of the rise of digital worker mobilizations in [Chapters 4](#) and [5](#) will be based. In doing so, we have built on the radical theoretical tradition of IR, which sees the conflict between capital and labour in the employment relationship as a structural element of the capitalist labour process. In this chapter, it has been shown how this analytical framework is also well suited to the world of digital work and to platform labour more specifically. Despite their apparently ‘neutral’ nature, digital platforms cannot be seen as simply a form of infrastructure which intermediates between different groups of actors (that is, workers and clients). On the contrary, it has been shown here that they mask a relationship of power and exploitation with their own ‘collaborators’, who are de facto their employees without possessing any of the rights that are normally associated with the standard employment relationship. In this sense, the relationship today between platforms/workers would seem to epitomize the new hegemonic dialectic of capital-labour in the platform economy.

Drawing on the extant literature on digital labour, therefore, we have built a two-by-two table typology of platform workers to identify the categories of workers that will be investigated in this book, namely crowdwork, on-demand workers as well as other more traditional sectors such as logistics that have been transformed by e-commerce and crowdwork. The central part of the chapter discussed the main challenges facing collective action for each of these categories by placing a particular focus on the workers investigated by the authors in the Italian context, that is, food-delivery couriers and Amazon drivers. As is evident, the rise in platform labour has been associated with an increased fragmentation of labour, which is designed to prevent workers from solidarizing with each other and therefore organizing their grievances and interests in collective forms. In particular, platform labour exhibits five forms of fragmentation, namely, legal, technological, organizational, spatial, and social, in response to which it can be very difficult for opposition to emerge. However, as [Chapters 4 and 5](#) of this volume will demonstrate, the two empirical cases of platform work under investigation in this volume (that is, food-delivery couriers and Amazon drivers in the Italian context), as well as the case of the Amazon Turkers, have been able to successfully face up to these obstacles and carry out collective forms of mobilization and organization, in a manner that has triggered political identity formation processes, albeit in different ways and with different degrees of power. Now it is time to turn to such collective experiences of worker mobilizations.

Organizing the Collective Action of Digital Workers

Variations in the mobilization processes of digital workers: forms of organizing

Social movement studies have often considered the importance of existing resources and organizational structures for mobilization (della Porta and Diani, 2020, Ch. 5). Mainstream IR literature has emphasized the role of trade unions in setting mobilization processes in motion (Frege and Kelly, 2004), devoting little attention to alternative forms of organization and the capacity of workers themselves to play a central role in mobilization processes (Mathers et al, 2018). Furthermore, some strands of this scholarship tend to see the implementation of technological and organizational innovations in the workplace as a means for increasing managerial control over workers and inhibiting their capacity for organization and collective action (Thompson, 2010).

Notwithstanding the previously mentioned conditions of extreme exploitation and denial of labour rights, platform workers have adopted a hugely diverse array of organizational forms and practices across different sectors, and also across different regions and countries within the same sector, when staging collective action. These multiple configurations have relied on very different networks of actors, which include political activists, traditional and rank-and-file unions, as well as movement collectives and organizations. In an attempt to make sense of such variety, Vandaele (2018) has identified three main patterns of organizational forms used by platform workers, regardless of the sector of action. Most of these workers have opted to 'self-represent' themselves, setting up their own self-organized collectives (especially among on-demand workers) or online forums (among crowdworkers, in particular) (Heiland, 2020). Others have been backed by

‘non-traditional’, grassroots, or rank-and-file unions (Alberti and Però, 2018). Finally, some (albeit an ever-increasing number) have been supported by traditional and established labour unions (Stuart et al, 2020).¹

IR literature points to a wide range of factors – institutional, agential, and contextual – that may shape the choices available to workers for different organizing forms. Many studies in this field still consider traditional unions and their characteristics as the main explanatory factors for their more or less fruitful encounters with non-standard workers.² Institutional approaches, such as ‘Varieties of Unionism’ (VoU) (Frege and Kelly, 2004), emphasize the role of extant, path-dependent institutional legacies in shaping the strategies that unions adopt to pursue the mobilization and inclusion of these workers. Unions embedded in an institutional context characterized by low institutional power resources and weaker collective bargaining structures should be more likely to pursue *organizing* as a privileged revitalization strategy, in order to increase power in the membership dimension. Vice versa, in a context characterized by neo-corporatist assets, unions should focus on a logic of influence, with little need to mobilize their members (Offe and Wiesenthal, 1980).

Other scholars emphasize the ideology of unions (Hyman, 2001) as a determinant factor in their inclusiveness towards non-standard workers. Unions with a working-class ideology (Benassi and Vlandas, 2016) or a radical left orientation (Vandaele, 2018) should have a greater disposition to include non-standard workers in their constituencies and to follow a logic of membership rather than a logic of influence (Offe and Wiesenthal, 1980). This implies privileging the relationship between the organization and the ‘immediate needs and interest’ of its members (Vandaele, 2018: 18), and thus focusing on the direct organization of gig workers. Conversely, ‘longstanding unions are more likely to adopt a logic of influence’ (2018: 18), privileging the relationship with interlocutors, such as employers and the state, and thus placing less attention on the direct mobilization and organization of potential members.

In contrast, other strands of literature consider specific features of the workforce – that is, the composition of workers, their collective identities, and values – as a determinant of their organizing practices. Some studies have indicated that precarious workers often opt for distinct and innovative forms of organization, alternative to those proposed by established union actors (Grote and Wagemann, 2018). For instance, Gumbrell-McCormick (2011: 298) highlights the fact that that precarious workers, especially young workers, may have, in virtue of their demographic characteristics and differential experiences of the world of work, different preferences from the ‘core’ union membership in their preferred forms of association and bargaining priorities. These preferences might occasionally be in conflict with those of established unions, thus creating a mismatch between what

non-standard workers want, and what established unions can offer – leading them to privilege other organizational forms.

While there is little evidence of systematic differences between non-standard and standard workers in their attitude towards unionization on the basis of their demographic characteristics (Kretsos, 2011), or their ‘labour market’ positions per se (Oesch, 2013), extant works have highlighted the fact that the way in which precarious workers perceive their own position within the labour movement and articulate their collective identity also shapes their attitudes towards the organizing strategies they adopt in their mobilization (Mattoni, 2012). Such dispositions, however, do not emerge in isolation, but are rather influenced by the social and political context into which workers are inserted (Però, 2019). Thus, contextual factors – such as political legacies and the local mobilization context – are also potentially relevant in order to understand variations in organizing practices (Cini et al, 2021). In this sense, the social, non-institutional dynamics of the local environment in which workers are embedded, consisting of a specific protest culture and the related social networks (della Porta and Diani, 2020) that characterize a given locality within and *beyond* the workplace (Chesta et al, 2019), shape the organizing practices of workers. Although the role of non-institutional political contextual factors has been more relevant in the sector of offline work delivery, given the physical interaction between these workers and between them and the local environment, this study has also observed a certain influence of some of these factors (especially the presence of activist networks, social movements, or civil society advocacy organizations) in the crowdwork sector.

Firstly, it has been noted how the presence of political activists and informal leaders (Kelly, 1998), as well as the intervention of self-organized infrastructures (Mudu, 2004), such as social centres, squatted houses, NGOs, and activist networks supporting workers in their mobilization efforts, have equipped several of these workers with organizational skills and resources for mobilization and with confrontational mobilizing frames (della Porta and Diani, 2020), thus shaping their dynamics of organizing. Secondly and related to this, it has also been observed how historical legacies and past experiences of militancy and community organizing at play in a given locality or region (Martinez Lucio and Connolly, 2012) have provided some of these workers with ideological frames of reference and established scripts for action to rely upon, in turn shaping their attitudes towards different organizational forms and the repertoires of action that they have adopted. Such legacies may have acted both as conduits (Moore, 2011) or as obstacles for different organizing efforts (Lopez, 2004).

In what follows, it will be considered how these different factors have been combined in accounting for patterns of similarity and variation in the organizing practices of platform workers across distinct sectors, but also,

and more importantly, within the same sector across different regions and countries (Joyce et al, 2020). More specifically, it will be shown that the interaction between platform workers and their surrounding environment has affected the formation of the local leadership, the organizational outlook, the capacities and dispositions of these workers, and consequently their ways of organizing collective action. In this chapter, we aim at understanding the variation in such organizational processes, paying particular attention on the different situations for food-delivery couriers and Amazon drivers in the Italian context as well as for AMT workers at the global level.

Organizing food-delivery couriers and Amazon drivers

The local and offline nature of the work-on-demand delivery allows these workers to develop concrete forms of mutualism and ‘cultures of solidarity’ (Fantasia, 1988) that, unlike those of crowdworkers, go beyond the constitution of online communities and enable them to build face-to-face organizations.

In this workforce, the most combative segment has been represented by food-delivery couriers (Stuart et al, 2020), who have been able to organize forms of collective action and association over the last half-decade across the globe (Heiland, 2020). Their forms of organizing have varied, depending more on the specific characteristics of the local context of mobilization than on the sectoral features or the industrial relations system (Cini et al, 2021). In other words, their heterogeneous organizational forms appear to be influenced by the different political characteristics of the regions, countries, and localities in which these workers have been acting rather than from the specificities of their industry (Joyce et al, 2020). As a result, within such organizational variation a greater role has been played by the networks of political activists and movements, as well as by the legacies and experiences of militancy and community organizing present in the various localities (Cini et al, 2021). Relatedly, this characteristic has also meant a predominance of self-organized or grassroots organizations in their experiences of mobilization, compared to other digital sectors where the presence of traditional labour unions has, in contrast, been more visible (della Porta et al, 2022).

In the case of Amazon logistics delivery stations in Milan, even a minimal source of concentration such as the van deposits allowed workers to meet and to socialize, although no real union was present in the sector. Workers collecting parcels for delivery at the beginning of their shifts, as well as returning the van to the Amazon station at the end of the day, were able to organize spontaneous assemblies outside the perimeter of the stations. In this sense, in spite of the fact that their working tasks were quite isolated and their contractual standards differentiated depending on the relative

conditions signed with the service providers working for Amazon, they were able to find a physical location to start organizing regularly. At the same time, these conditions produce a specific form of worker power. The physical concentration in a specific location, such as the parcel distribution station, opens up space to potential forms of organized blocking of the delivery process. Indeed, Milanese Amazon drivers were able to organize the first cycle of contention by exploiting this setting to organize a cycle of strikes and pickets in front of the stations. This setting allowed for a new type of collaboration between workers and traditional unions: Amazon drivers with no previous union experience were able to mobilize together with specific sectors of the traditional unions in the logistics sector, such as the Federazione Italiana Lavoratori dei Trasporti of the Confederazione Generale Italiana del Lavoro (FILT CGIL) (Chesta, 2021). If, in this sense, the first cycle of contention carried out by Amazon drivers in Milan is typical of new alliances between structured unions and new workers, other cases of contention, like the new food-delivery couriers employed through platforms, are typical of more grassroots modes of mobilization.

In the case of riders, grassroots collectives of couriers, such as the Collectif Livreurs Autonomes de Paris in France or Riders Union Bologna in Italy, have indeed been the backbone of mobilization in their respective countries. More generally, the self-organization of workers has been a relatively typical pattern in the organizational forms of couriers in most western European countries. Almost all of the protests and strike actions that have taken place in these countries have, in fact, been organized by informal collectives of workers. They have been supported less by traditional unions and more by rank-and-file unions and networks from the radical left (Heiland, 2020). Several scholars have remarked that in most cases the role of the established network of activists has been pivotal; either those belonging to long-standing political areas of the radical left (such as post-autonomous social centres or post-Trotskyist groups) or formed as crystallizations of the recent wave of anti-austerity mobilizations that has characterized several European countries in the last few years (Joyce et al, 2020; Stuart et al, 2020; Cini et al, 2021).

In the British context, for instance, the collective organization of couriers was 'the result of a non-union form of self-organization which was invisible to external observers, including the union itself. [This] invisible organization had two channels: the WhatsApp groups, and the zone centres' (Cant, 2019: 132). Such organization seems to have come from two converging streams of experience. The first is the labour process itself, as precarious delivery workers managed to forge a community under unorthodox circumstances, mostly via groups on encrypted instant messaging apps. The second is the networks of political activists and rank-and-file unionists who grew from the subjective experience of the movements that followed

the 2008 financial crash. Many of the organizers and supporters of these struggles had been socialized to activism in that particular period of anti-austerity protests (Cini, 2019). Where these two streams have met, rank-and-file organization has been the result (Cant, 2019). As the political activist and Deliveroo courier, Callun Cant, reports in his book, *Riding for Deliveroo* (2019):

The key organizers within the cyclist workforce often had some kind of experience in the social movements that emerged after 2010. This was where I fitted in. The student and anti-austerity movements had given us a common set of ideas and tactics. In the realm of ‘big P’ politics, we were all socialists of one kind or another. (Cant, 2019: 135)

The first protest against Deliveroo took place in August 2016, as dozens of workers gathered outside the company’s main office in Central London to challenge the company’s decision to move from an hourly pay system to piecework payments. This turned into the first ‘unofficial’ strike of Deliveroo workers in the UK: the workers logged out of the app, effectively causing a work stoppage, and set up a kind of ‘picket line’ outside the head office, demanding responses from management around the proposed changes to the payment policy (Tassinari and Maccarrone, 2019).

It was at this point that the first contact between Deliveroo workers and grassroots labour organizations took place. The first organization to offer its support was the rank-and-file union Independent Workers’ Union of Great Britain (IWGB). Created in 2012, IWGB had already been active for two years, organizing workers in the courier industry in London, as well as other low-wage service sector workers (for example, in cleaning and security). When protests at Deliveroo started, IWGB organizers offered workers assistance in coordinating the formulation of demands and negotiating with management, in order to avoid the victimization of individual workers. These union representatives managed to gain the trust of the workers, as they were able to present their track record of success in organizing couriers in London and winning significant pay concessions from other ‘para-logistics’ companies (Cini et al, 2021).

As the workers waged a six-day-long wildcat strike action, the support offered by the IWGB was crucial. As well as helping with the formulation of their claims, the union organized a crowdfunding campaign to sustain the striking workers, which, in the space of a few days, raised £20,000, thus increasing the sustainability of the protest. The mobilization attracted a great deal of public attention and support. Eventually, Deliveroo agreed not to unilaterally impose the new piecework payment system on all couriers, but to start an opt-in trial in some areas. This partial victory demonstrated that collective action produced results, incentivizing a unionization drive.

Following this first episode, a sizable group of couriers joined the already active couriers' branch of the IWGB. Since then, the union has started a longer-term campaign of unionization of Deliveroo couriers, active across several cities in the UK. This has entailed ongoing recruitment efforts and two main claims: a guaranteed hourly living wage for all, and the re-classification of all couriers as workers rather than self-employed. Further campaigns have also been launched around health and safety, insurance coverage, sick pay, and, most recently, the provision of income support and adequate protections during the COVID-19 pandemic. The organizing methods pursued by the IWGB effectively combine three strands of complementary tactics: 1) the grassroots organizing of couriers through recruitment stalls in the city, leafleting and public mass meetings; 2) the mobilization of public opinion through social media and the pursuit of high-profile media coverage to maintain attention on the issue; and 3) legal action to pursue formal union recognition and contest the self-employed status of couriers through legal avenues. Over time, the success of the IWGB's tactics in raising the profile of the first Deliveroo dispute and standing by workers at risk of victimization encouraged other couriers to join the union and the protests, thus overcoming their earlier feelings of being 'too scared to participate' (Cant, 2019).

The protests of Deliveroo couriers in London have had significant ripple effects. Firstly, Deliveroo courier mobilization and self-organization have since sprung up in a number of UK cities, such as Bristol, Brighton, and Leeds, where workers have held protests, impromptu strike actions, and raised similar demands with the company. In all of these cities, the couriers have been supported either by the IWGB Couriers' branch (as in Brighton), or by another anarcho-syndicalist union, the Industrial Workers of the Worlds (IWW) – as in Leeds and Bristol – operating with similar tactics (Cini et al, 2021).

In more general terms, in the UK context, grassroots unions, such as the IWGB or IWW, not only have a more traditional scope of intervention but also extensive prior experience of organizing in sectors (such as other private service industries in the urban context) with characteristics and a workforce composition similar to those in the platform economy. Rank-and-file unions, such as the IWGB, were indeed born in the urban private services sector, more specifically in the outsourced cleaning and security services, and subsequently expanded into the 'pre-platform economy' courier and delivery/bike messenger sector (Alberti and Però, 2018). This experience endowed them with capabilities and specific skills that enabled them to also intervene effectively in the case of location-based platform labour.

The IWGB's prior experience of organizing in the courier sector and, more broadly, in orchestrating disputes in the urban service sector was helpful in a number of respects. Firstly, a credible track record of victories helped

to increase its credibility and legitimacy vis-à-vis the couriers. The union's success in securing pay increases for couriers in other London-based firms played an important part in increasing its credibility in the eyes of the couriers in the initial stages of the dispute (Cini et al, 2021). Secondly, its experience of organizing in sectors – such as bike delivery – characterized by the physical dispersion of the workforce and 'atypical' employment arrangements akin to the platform economy gave the IWGB a good understanding of the most effective approaches and tactics in a sector characterized by high informality. Indeed, the IWGB developed a distinctive capacity for combining grassroots mobilization, often operating on the limits of the law, through unofficial strike action and a combination of physical and digital pickets. These included high-profile legal challenges waged through the employment tribunal system, so as to creatively use the channels of labour law and collective bargaining in its favour. At the same time, the IWGB managed to adapt its repertoire of action to the features of the courier workforce, which was mostly made up of either young or migrant workers with no prior unionization experience. A Deliveroo courier involved in the London dispute, for example, recalled how one of his colleagues leading the unionization efforts successfully established a relationship between the couriers and the union as he was able to present this to his colleagues in an accessible and relatable way. In his words:

I had never been in a union and I was leftist in like, broad strokes, but I really hadn't done any of this stuff before. ... He [the IWGB organizer] was like, slightly older but still kind of my age, but much more clued up, and he didn't talk in unionist language at all. He wasn't from like ... RMT [National Union of Rail, Maritime and Transport Workers] or whatever, he wasn't calling everyone comrades, he wasn't old, he was just like – 'hey this really sucks, we're meeting in this park in a week's time, you know, to hang out'. (UK8; cited in Cini et al, 2021: 10)

Indeed, it is not a coincidence that in all of the British cities where the food-delivery couriers have appeared the most organized, such as London and Brighton, all major prior experiences of precarious workers organizing in the urban service sector had been articulated through such combative unions. These varied political experiences – such as, for example, the long-running organizing campaigns of cleaning and security migrant workers in universities, hospitals and large service sector firms across London (Alberti and Però, 2018) – enabled the formation in the local urban context of a milieu of activists and organizers. Many of these were former student movement activists (Cini, 2019) who in previous years had built up expertise or at least familiarity with the practice of organizing precarious workers through the framework of rank-and-file grassroots unions, such as the IWGB or the IWW.

When the more politicized activists in the Deliveroo workforce – several of whom were also or had previously been university students – started to coordinate after the initial outbursts of ‘spontaneous’ worker discontent, they therefore drew on their networks and prior experiences in the universe of London grassroots unionism, facilitating a fruitful encounter between couriers and these segments of the emerging precarious workers’ labour movement (Cant, 2019). Several organizers in the Brighton Deliveroo dispute had had substantive prior involvement in the UK student movement and in supporting the organizing campaigns undertaken by the IWGB/IWW among university cleaners in London (Cini, 2019). These enduring social networks and previous political experiences proved crucial in forging relationships with the IWGB. As one of these organizers confirmed (in Cini et al, 2021: 14):

So [at the beginning of the dispute] the cyclists were having meetings with 25–30 people, basically just chatting about stuff, and I raised the idea that we should have a union meeting and everyone was like ‘Yeah, that sounds like a good idea’, so I set it up and got in touch with the IWGB, asked them if they could come down, can we join, can you help us unionise. (UK4)

Prior experience in organizing labour disputes was also instrumental in the London context, where the role played by skilled activists in forging links with the union and organizing one of the first strikes in South London was crucial (Cant, 2019). By and large, through the effective use of social media among other things, these activists and grassroots organizations have not only been able to promote a successful campaign to support the mobilization of Deliveroo’s workers, but they have also been able to frame the couriers’ struggle as part of a broader agenda of mobilization against the new forms of exploitation present in the platform economy, connecting these mobilizations with analogous disputes involving other firms belonging to the on-demand platform economy, such as Uber, Addison Lee and City Sprint (Cini et al, 2021). In doing so, such grassroots networks of activists were thus able to use organizational experience acquired in previous precarious workers’ struggles to organize resistance in the British platform economy more widely.

The research conducted by the authors on the food-delivery courier mobilizations in the Italian context has highlighted similar dynamics of grassroots forms of organizing among these workers. However, unlike the British context where rank-and-file unions have played a major role, Italian couriers have relied more upon the political tradition of the self-organization of precarious workers (Mattoni, 2012). Indeed, since the early 2000s, Italy has seen the emergence of precarious workers’ collectives under the banner of San Precario, the fictitious patron saint of non-standard workers

(Hyman and Gumbrell-McCormick, 2017). This experience has often been conducive to the autonomous mobilizations of workers within different sectors and workplaces, for instance call centres, publishing houses, and airport services (Murgia and Selmi, 2012). The research has indicated that, in all of the cities investigated, a persistence of established legacies within a political culture of radical activism favoured the emergence of autonomous collectives or informal unions as the privileged organizational form among food-delivery couriers.

While self-organization has not necessarily excluded cooperation with confederal and/or grassroots unions, these groups have maintained their own autonomous organizational practices. Precarious workers' experiences of self-organization were often interconnected with the tradition of mutualism, which is well-embedded within Italian social movements, receiving infrastructural and material support from social centres and occupied spaces (Bosi and Zamponi, 2019). Self-organized workers also fostered alliances with other actors, such as student organizations and housing movements, holding joint demonstrations and campaigns (Cini, 2019).

In concrete terms, at the time of the study the legacies of self-organization in different Italian cities were evident in the continued presence of networks of local activists with past involvement and expertise in the self-organization of precarious workers, and of self-help infrastructures such as social centres, squatted houses, and militant associations (Mudu, 2004) that were historically inclined to collectively organize marginal actors, such as migrants, students, precarious workers (Mattoni, 2012). Practices of self-organization supported by Italian social movements resurfaced within the struggle of food-delivery couriers and contributed to shaping said struggle (Cini and Goldmann, 2021). In Turin, Milan, and Bologna, couriers set up self-organized collectives, which benefited from the material support of social centres and occupied spaces active within the local urban context (Caruso et al, 2019). In Turin, it was possible for the workers to use an occupied building, Cavallerizza Reale, to hold meetings, promote fundraising activities, and create a bike clinic. In Milan, self-organized couriers received the support of activists from the San Precario network and used the infrastructure provided by a social centre called Piano Terra to organize their activities. Similarly, in Bologna the couriers found support from associations and social centres such as Ritmo Lento, L'Altra Babele or Lâbas to host meetings and organize shared activities like bike repair clinics.

These legacies of self-organized activism that key militant workers and activists brought with them and that were embedded in their respective urban contexts influenced the organizing practices of food-delivery couriers in two main ways (Cini et al, 2021). Firstly, past and current experiences of self-organization contributed to shaping the preferences, ideological inclinations, and organizing cultures of the key activists (della Porta and

Diani, 2020) and workers involved in the early stages of the mobilization. Concrete involvement in autonomous social movement spaces made them more inclined to reproduce similar models and repertoires of action in their emerging labour mobilization. An example of this is the fact that, although none of the interviewed activists in the various Italian cities expressed diffidence towards unionization per se, their prior direct involvement in, or appreciation of, positive past legacies of self-organization made them highly value political and organizational autonomy in their mobilization practices. This emerged clearly as an important guiding principle in the interviews. For example, a Deliveroo courier in Turin with an activist background (C3), commented:

‘Myself and some other colleagues who were a bit more politicized pushed, arguing that ... if we end up in there [that is, inside a mainstream union] then they will eat us up ... so, we chose to engage initially with a union [SI-COBAS] that had a leaner structure, so that we could decide things ourselves. Otherwise, the struggle would have ended up with us issuing union membership cards and dealing with bureaucrats.’

Similar opinions in support of self-organization as a lesson learnt from past experience were also expressed also by organizers in Milan (C11, Deliverance Milano) and in Bologna (C16 and C17 in Riders Union Bologna – RUB). These past legacies also partly shaped workers’ repertoires of action, as they repurposed scripts of action that had proven successful in previous precarious workers’ movements. For example, some of the mobilization practices adopted by the Italian courier collectives, such as holding ‘critical mass’ demonstrations, had traditionally been part of the ‘toolbox’ of Italian social movements (Bosi and Zamponi, 2019).

Secondly, these previous experiences of militancy provided local activists with political skills and organizational resources (social networks, know-how, and sources of concrete support from other groups), which helped the self-organized collectives of workers to take shape (Chesta et al, 2019). In fact, such experiences of political participation operated as a sort of training ground where activists learned how to organize protest events and assemblies and lead demonstrations and rallies. Various couriers pointed out how such experiences provided them with self-confidence in the organization of collective action. In other words, their involvement in such spaces and experiences helped these workers to take up the role of informal leaders in the courier mobilization.

By and large, the presence of such a tradition of political activism has been key in the choice of self-organization and informal unionism made by Italian couriers as opposed to seeking the help of traditional unions, or the

organizational support of rank-and-file unions, as in the case of the British mobilizations. That is to say, no grassroots or traditional union was able to adapt its organizational repertoire in a context in which, since the beginning of labour unrest, self-organizing movement structures and political activists have also been central in inventing new forms of actions, such as the ‘digital strike’ (Tassinari and Maccarrone, 2019). Commenting on the difficulties encountered in the relationship with trade unions in Turin, one courier remarked: “We speak about apps, Facebook, shitstorming and mailbombing, and then they say, ‘Yes, let’s go there and block the restaurants’ ... strategically it seems a bit anachronistic to me” (C2). This explains why no Italian trade union has been able thus far to adapt its forms of organizing in a way that is appropriate – in the couriers’ view – to fight back against the unfettered power of food-delivery digital platforms.

Collective mobilizations of food-delivery couriers have also been a regular event in several other European countries. In France, for instance, there have been frequent protests by food couriers over the last number of years. As early as December 2016, Deliveroo couriers protested in Bordeaux, where the CGT union was founded, representing couriers from various platforms (Joyce et al, 2020). The Collectif Livreurs Autonomes de Paris (CLAP) organized a strike during the final of the Football World Cup in order to affect the platforms during one of its most profitable weeks (Heiland, 2020). In Belgium, workers founded the Collectif des coursier-e-s/KoeriersKollectief and organized couriers across different platforms, set up a strike pot, and held several protests in 2017 and 2018 with the support of traditional trade unions (Eurofound, 2018). In Spain, Deliveroo couriers went on strike in Barcelona and Madrid in July 2017 (Heiland, 2020), and after further disputes, some of the protesters set up an alternative cooperative delivery platform. In April 2020, there were protests in Madrid by couriers of Glovo, opposing a reduction in the base pay rate (Eurofound, 2018).

In Germany, and more specifically in Berlin, the Foodora couriers have mobilized by relying upon the independent rank-and-file union Freie Arbeiterinnen und Arbeiter Union (FAU), with an anarcho-syndicalist orientation. In 2017, this union took direct action by organizing various protests in the form of flying pickets in front of the company’s offices, where hundreds of couriers gathered to file their claims for improved working conditions. These actions led to negotiations with the company, after which Foodora introduced a small payment for the worn-out bicycles of workers, but rejected the other demands, resulting in the FAU declaring the negotiations as failed in autumn 2017. At the end of 2018, Foodora and its delivery platform were taken over by the competing take-away company Lieferando. Before the two were formally merged, the couriers elected workers’ councils in several cities, requiring them to be incorporated into the new corporate structure (Heiland, 2020).

Over the last number of years, aside from these cases of mobilization across various European countries, there has also been an attempt to carry out a transnational coordination of food-delivery couriers. Indeed, during their mobilizations, these collectives of couriers, located in different cities and countries, have not only fought their own platforms, but have also tried to form solidarity networks with couriers in other cities and countries to address the working conditions of this kind of platform labour. Various national and sub-regional initiatives have thus supported each other or have cooperated in coordinated protest actions. As a follow-up to this cooperation, online forums in which couriers from different countries can exchange political ideas and proposals have been created. This transnational coordination has also occurred in face-to-face meetings. At the 2016 conference of international grassroots unions in Bilbao, for instance, the Deliverunion campaign was founded by politically engaged couriers and activists, with unions from eight countries taking part in the meeting (Joyce et al, 2020). In July 2017, an exchange of couriers from different countries took place at a conference in Berlin, while in September of the same year, a meeting took place in Turin in the context of the protests against the G7 summit (Heiland, 2020). Finally, food-delivery couriers from 12 different countries and 34 organizations met in October 2018 in Brussels, where the Transnational Federation of Couriers was founded with the aim of launching a European mobilization of food-delivery couriers (www.altersummit.eu/analyse/article/behind-the-apps-lessons-from-the-european-riders-assembly). This meeting in Brussels could be said to represent the most successful outcome of the process of transnational coordination among couriers, union representatives, and activists, which had been taking place over recent years with various European meetings and events.

However, this is not the whole story. Over the last few years, food-delivery courier mobilizations have also occurred in non-European countries, especially in Latin America, where combative segments of this workforce have constituted informal and self-organized collectives of couriers to carry out disruptive action and resist various food-delivery corporations, such as Glovo and Deliveroo (Stuart et al, 2020). In some of these Latin American countries, the courier mobilizations have also challenged the business collusion between the digital platforms and the political elites aimed at limiting the civil and social rights of citizens and workers (Joyce et al, 2020).

Overall, these various forms of courier mobilizations across distinct regions and countries have pointed to the capacity of these workers to collectively organize within and around their workplace. In doing so, the couriers have managed to overcome all the various types of fragmentation typical of this form of platform labour. More importantly, their organizational differences notwithstanding, these mobilizations have all been able to fight

back against the unfettered power of food-delivery companies in unexpected and surprising ways.

Organizing the Amazon Mechanical Turk workers

In several countries, political activists and engaged academics have played an initial key role in support of the organizing of crowdwork platform workers, while the political intervention of more structured organizations, such as traditional labour unions or rank-and-file and independent unions, has occurred only at a later stage. These networks of activists, engaged academics, and workers have indeed organized public campaigns to improve the conditions of crowdwork platform workers by appealing to public opinion in denouncing the misconduct of corporate platforms. In doing so, and in line with the political aims of the ‘platform cooperativism’ movement (Scholz, 2016), they have also contributed to building online communities, whose purpose has been to establish fairer relations between workers and users.

An example of joint action between activists (especially engaged academics) and crowdworkers is the establishment of Dynamo, ‘a platform for the creation of [Amazon Mechanical] Turker publics that aim for action and change’ (Salehi et al, 2015: 1630). To date, the platform has targeted the public in two campaigns. In 2014, in response to an increasing number of scientific studies that recruited their subjects via crowdwork platforms and their widely varying quality and payment, a group of crowdworkers and researchers developed ‘guidelines for academic requesters on the platform Mechanical Turk’ (Berg et al, 2018: 97–8). The guidelines explained how good micro-tasks should be created and what ethical pay for academic research should be. The second campaign by Dynamo directly targeted Jeff Bezos, the CEO of Amazon and head of the AMT platform. Workers were asked to write a personal letter ‘to let Jeff Bezos ... and the rest of the world know ... that Turkers are not only actual human beings, but people who deserve respect, fair treatment and open communication’ (Salehi et al, 2015: 1628). The campaign was widely reported in various media outlets. More generally, these initiatives were ‘primarily aimed at the public sphere to exert pressure on the platforms, appeal to their corporate social responsibility, and achieve an improvement in working conditions’ (Heiland, 2020: 47).

Protests have also aimed at sensitizing the public, particularly given the already cited role of customers in the control of workers. In general, crowdwork platforms are characterized by information asymmetries. Not only do they withhold information or gradually disclose it during the labour process, but they also generate new information by means of evaluation mechanisms, which are particularly relevant in the case of crowdwork for the distribution of orders. A crucial point here is that these mechanisms are one-sided; usually it is only the customers who are able to evaluate the

workers and not the other way around. Balancing this information and power asymmetry was the goal of Turkopticon (Irani, 2015), a website and a browser extension funded in 2009 for the AMT platform, acting as an ‘information equalizer’ (Avins et al, 2018: 22). The tool offers a counter review system, allowing crowdworkers to rate requesters. As a result, AMT workers have been able to evaluate their pay, speed of payment, fairness of the work review, and the quality of communication. These ratings are displayed by Turkopticon directly on the platform next to the requests, with bad ratings highlighted (Irani, 2015). In doing so, Turkopticon provides ‘a place for workers to help one another with information and their experiences about employers’ (<https://turkopticon.net>), avoiding requesters with a bad reputation. Eventually, there will be the possibility to positively influence the design and execution of future human intelligence tasks (HIT) (Casilli, 2020).

What is more, this alternative system of rating has allowed workers to make their relationships with employers visible and to hold those employers to account (Altenried, 2020). Turkopticon has, in fact, created an internal and specific voice opportunity for AMT workers, who from time to time have orchestrated brand-shaming campaigns against Amazon to some success. Yet, the main challenge is the fact that Turkopticon ‘is a volunteer-operated system with no revenue and, as a result, has struggled to sustainably address issues such as onsite harassment and deceptive reviews’ (Berg et al, 2018: 96). Furthermore, its effectiveness depends on a high level of participation. Even if ‘[c]ollective rating on Turkopticon is an act of citizenship in the digital world’ (Matias, 2015), this has so far only been used by a small fraction of crowdworkers on the platform: the plug-in has been installed 35,000 times, compared to the half a million workers on AMT (Wood et al, 2019).

Turkopticon has also been the inspiration for another form of online organizing, namely, the website FairCrowdWork.org, which was set up in 2015 by the German Metalworkers’ Union (IG Metall) (Berg et al, 2018) with the aim of reviewing the working conditions on crowdwork platforms based on the workers’ assessments. The dimensions for the evaluation of platforms on FairCrowdWork were similar to those used by Turkopticon, although they exhibited a more differentiated outlook in terms of options and with a focus on different platforms. The ratings were collected through surveys, which asked platform workers about their experiences on the platform in relation to various aspects, ranging from their relationship with clients to the time needed to perform the task. The respondents were recruited directly on the specific platforms, general information about the platforms was presented, and their terms and conditions were evaluated by legal experts (Heiland, 2020).

A wider range of platforms was taken into account by the Fair Work Foundation, which ‘is committed to highlighting best and worst practices in the emerging platform economy’ (<https://fair.work>). It has caused leading

firms to be concerned about unethical practices in their supply chains, and it aims to have a similar impact in the realm of digital work. To achieve this, a range of stakeholders in the platform economy in different countries have been brought together in order to work out a set of principles that could improve the conditions for platform workers, including fair pay, working conditions, contracts, governance, and representation (Graham et al, 2017: 5). In the next step, the working conditions and processes of different platforms were assessed with the help of a rating scheme. At the end of an evaluation, based on interviews with platform managers and workers, as well as desk-based research, each platform was assigned a score from one to ten. The first rankings were published in March 2019 and are to be updated annually. Having begun with South Africa and India, the project is expanding its scope and is currently looking into platforms in Chile, Ecuador, Germany, Indonesia, and the UK in order to 'give meaningful incentives to platforms to bring their practices into compliance' (Graham et al, 2017: 4).

Overall, what all of these various and diverse experiments examining the organizing of crowdworkers point to is an increasing capacity of these workers to address some shared concerns about their working situation and to fight back. With the crucial organizational and political support of various actors, such as movement activists, engaged academics, civil society organizations, as well as more recently a number of trade unions, these workers have indeed been able to politicize the relationship with the platforms for which they lend their services by obtaining some concessions in terms of better working conditions (Heiland, 2020). The main feature of their organizing is the experimentation with and creation of social media-based communities. Such 'communities of coping' (Korczynski, 2003) have been particularly helpful in enabling these workers to seek mutual advice regarding problems with their platforms, deal with difficult clients as well as late and non-payment, and resist unpaid labour. Workers have also used these communities to warn each other of bad clients. More importantly, the online forums have helped crowdworkers to develop a sense of collective grievance against their platforms (Wood and Lehdonvirta, 2021).

Furthermore, very recent studies have also highlighted how and to what extent the creation of online communities of crowdworkers has not only spurred soft forms of mobilization and action, but has also triggered an eventful momentum for the development of a shared sense of collective identity among these workers, which in turn might potentially lend itself to the formation of innovative forms of trade unionism (Wood, 2020). Whether such organizational experiences will give rise to face-to-face political communities is an open question that can only be answered in the fullness of time. However, what already seems clear is the fact that these largely self-organized, online communities today form the basis of a collective effort to challenge insecurity in the crowdwork sector as a whole.

Conclusions

This chapter has provided the reader with a detailed overview of the forms of organizing and action that platform workers have adopted and/or invented in their mobilizations over the last decade across the globe, albeit paying particular attention to western Europe. In doing so, the chapter has made several contributions, both theoretical and empirical.

From the theoretical point of view, the chapter has critically engaged with the extant literature on labour organizing, especially IR studies, to make sense of the new labour conflicts in the platform economy. More notably, it has been shown how most of these mobilizations have occurred in the absence, or with only the marginal presence, of traditional trade union organizing, while being supported instead by unconventional constellations of actors and resources. This peculiarity has encouraged the authors to look at all of those perspectives, such as Social Movement Studies, which consider these factors as key features in the mobilization processes of workers. Secondly, and relatedly, contrary to what some IR studies expect, these mobilizations have taken place in working contexts that exhibit high levels of technological innovation and, more generally, are associated with various type of labour fragmentation. Building on Labour Process Theory and Social Movement Studies, the chapter has identified all those resources and opportunities within and around the workplace that these workers have been able to exploit (and in some cases even to create) in order to mobilize and to stage their collective action and, in so doing, to overcome several processes of labour fragmentation.

More generally, given that a significant amount of IR studies still focuses on trade unions and on their resources in the ongoing discussion on the renewal of labour mobilizations, a further contribution of this chapter is to move this debate forward. The analysis has outlined how the space for developing worker counter-potential is never foreclosed, even in the digital workplace, which is characterized by many specific forms of fragmentation. In this sense, it has overcome the institutional focus and the ‘union-centrism’ of mainstream IR scholarship by assigning a central role to the agency of workers in the dynamics of mobilization taking place in sectors characterized by low degrees of prior institutionalization of labour relations.

From an empirical point of view, the chapter has filled in some gaps in the growing field of studies on labour conflicts in the platform economy. Contrary to what has been argued by most of these studies, it has offered a more specific and detailed account of their trajectories and forms of mobilizations by distinguishing and making sense of the two macro-categories of which digital labour consists, that is, crowdwork and app-based work-on-demand. This distinction has made it possible to identify the specific differences in terms of forms of organizing and action peculiar to the

two categories. In particular, the divergent feature of the two categories in terms of local/offline vs global/online work delivery has heavily affected the ways in which these workers have organized their collective mobilizations. In this respect, the findings have shown how and to what extent the presence (or absence) of a physical social interaction among the workers themselves has been crucial. While crowdworkers have thus far only managed to carry out online actions and organize virtual communities, on-demand workers have instead been able to deploy various forms of offline action and build enduring offline organizational networks and communities. Moreover, in relation to this, the disruptive potential and political generalizability of on-demand worker mobilizations have been considerably higher than those carried out by crowdworkers.

Within the on-demand sector, special attention needs to be paid to the mobilizations of food-delivery couriers and Amazon drivers in the Italian context. These workers have been by far the most politically active and organizationally innovative segment of the digital workforce. In particular, the vast array of organizational forms that these workers have adopted across different countries and cities is worth further investigation. In our view, this indicates that specific features of the local context in which such mobilizations have unfolded, such as the political legacies and traditions of militant organizing, have significantly influenced couriers' organizing practices. More generally, these findings underscore the importance of considering local historical legacies and the political features of the social environment, aside from the workplace itself, as an important determinant of the organizing practices of digital workers.

Worker Collective Identity and Solidarity in Action in the Digital Age

Collective identity in formation: from 1960s factory workers to digital workers

The current phase of digitalization and the rise of platform capitalism has revived old dilemmas regarding worker collective action, while digital technologies have triggered both new opportunities and challenges. Although digitalization creates new constraints, such as digital intermediation, the depersonalization of employment relations and algorithmic control, it implicitly creates new opportunities for collective action in innovative forms of communication and coordination among workers, as well as in the form of digital strikes. This chapter will investigate these forms of collective action and examine how the specific claims, frames, and repertoires of action contribute to defining the new collective identities of digital workers. Indeed, digitalization is a process shaped by the social actors involved in a specific phase of technological and organizational change that affects the nature of employment relations and processes of recognition. Depending on whether there are low or high levels of institutional regulation and worker organization, it can either trigger contradictory processes of precariousness and individualization, or help to shape new identities and solidarity in the field of labour.

The literature on social movements has investigated the various links between collective action and collective identities, exploring the necessary conditions under which pre-existing identities become relevant for the rise of new mobilization processes, or reciprocally how new collective identities are processed through action (Polletta and Jasper, 2001). These aspects have also been studied in a different manner by industrial relations research,

which has shown how strikes can be conducive to specific forms of class consciousness and worker solidarity (Hyman, 1975).

The process of identity formation through collective action is usually linked to a number of specific conditions like organizational and ideational resources. Resources such as pre-existing social networks, spaces, or institutions of solidarity are as important as self-narratives that define motivations and provide the cultural repertoires for collective actions (Melucci, 1996). Ideational and cultural aspects defined by collective identity also influence the choice of forms of action. Identity boundaries also vary depending on the phase and cycle of mobilization, as identities tend to be more rigid and exclusive when developed in times of disengagement, while they are more inclusive in times of collective expansion (Tarrow, 1998). Collective identity is, thus, a process which must be understood in a relational manner as it partly depends on external structural conditions, but it is also partly a social construction of the actors that, out of necessity, repeat and innovate cultural frames and codes while acting collectively. It is collective action that, by transforming the everyday experiences of workers, disrupts their old routines and develops new ones, creating new relationships within the workplace, but also outside of it in the broader community. These dynamics bring about the emergence of new social identities of the groups that are mobilizing, which Rick Fantasia (1988) calls ‘cultures of solidarity’. For him, ‘cultures of solidarity’ are constructed by workers during the course of and as a result of their struggles.

In this sense, the building processes of worker identity are the condition and the result of their collective mobilization, a point that was addressed by Alessandro Pizzorno (1993), in particular through his concept of *struggles for recognition*, which has been particularly relevant in terms of understanding the labour conflicts of the 1970s. In his view, for these struggles to occur a preliminary process of group identification among workers was necessary, one that was favoured by their daily interactions in the physically delimited space of the factory (Pizzorno, 1978a). Indeed, this identification allowed ‘members of a community to recognize themselves as such with ensuing possibility to mobilize solidarities and collective action’ (Pizzorno, 1983: 175). Thus, the recognition struggle meant the struggle of emerging groups to have their existence as a collective actor recognized.

In analyzing the cycle of worker struggles across Europe at the end of the 1960s, Pizzorno showed how the definition of established collective interests was in some cases a consequence of struggles for recognition. Interests cannot, in fact, be reduced to a sum of individual rational choices:

when the organization which represents the workers becomes more powerful – by receiving new positions of power instead of immediate benefits for its members – it is by this token strengthening its capacity

for obtaining future benefits ... when new groups which are not, or do not feel themselves to be represented as such in the existing system express a collective will to be represented, a process of formation of collective identity sets in, which tends to disrupt the pattern of mediation. (Pizzorno, 1978b: 285)

Emerging groups first need to construct a collective identity to assess the magnitude of the interests at stake (Pizzorno, 1993: 228).

Pointing to the limits of Olson's rational choice explanations of collective action, Pizzorno argued that in the emergence of new collective identities within struggles for recognition, in contrast to the struggles around already formed interests and identities, the building of solidarity is a main aim in itself. Thus, '[t]he real end is non-negotiable, since it consists in the formation of the very subject which has successively to become the actor of the exchange and the bearer of gains and losses' (Pizzorno, 1978b: 293). In this sense, Pizzorno developed his own theory of 'rationality', with the aim of overcoming biases that had become widespread in mainstream Anglo-Saxon social theory, such as the emphasis on 'interest' and 'strategy', at the expense of a focus on 'identity' and 'recognition', which Pizzorno considered more apposite for appreciating institutions and power relations.

It is identity seeking and not interest seeking that can explain collective action: there's no interest without an agent calculating it, and the existence and persistence of that agent cannot be taken for granted, it is instead that which has to be explained at the beginning, that is, problematizing the processes of identity creation through recognition. (Sassatelli, 2005: 103)

If social movement scholars have shown how egalitarianism and solidarity are key specific functions of collective identity formation processes, for industrial relations scholars, the presence of a claim for political egalitarianism within the labour movement is the main feature marking the rise of a 'class-consciousness' among workers (Meardi, 2005). In this sense, the worker mobilizations across Europe in the 1960s pointed to the emergence and spread of a new type of class consciousness among the most combative segments of the factory workforce.

In line with this understanding, this chapter will analyze the emergence of worker identities by looking at both dimensions, namely, at workplace-related features as well as the social and political features of the broader (local) context. The latter seem particularly relevant for the identity-making of platform workers, who normally perform their labour from home or in spatially fragmented workplaces. In doing so, it will move beyond the classical IR vision that sees the building of worker identities and interests as grounded

in traditional notions of the employment relationship. By challenging the long-standing view that worker identities derive solely from their place in the division of labour in the workplace, social movement studies suggest a new direction for IR theory and research (Tapia et al, 2015). If, as Piore and Safford (2006) argue, social identities may be replacing workplace identities as the locus for mobilization, IR theorists will need to look more to social movement, political mobilization, and interest group politics in order to explain and predict the future trajectories of the formation processes of worker collective identity, especially during the current phase of expansion of new digital platforms.

In what follows, we will first develop a general argument about the specific characteristics of the collective action of digital platform workers. We will present the empirical cases of mobilization in Italy, which we will integrate with an extensive review of research on other national cases. By examining the new articulation between physical and digital spaces of contention, we will then summarize our results on workers' collective identification in the new wave of digitalization, emphasizing the continuities with previous cycles of contention as well as the elements of innovation.

The unfolding of digital worker mobilization processes: their forms of communication and action

While Pizzorno's analysis (1978b) was certainly path-breaking in explaining the European cycle of worker contention at a specific and critical period of Fordism, his reflections can still be considered relevant today in exploring the collective identity formation processes of digital platform workers. As will be shown in this chapter, in line with current critical traditions in the sociology of work, his concept of the struggle for recognition may contribute to an understanding of how the emergence of collective action is able to challenge existing structures and habits, producing collective identification even among these contemporary workers. Recent protests on digital platforms, conceived as 'eventful' in the sense of their capability to transform existing resources and opportunities (della Porta, 2020), have followed this process. It is through intense mobilization, establishing new relations of solidarity between previously unknown individuals and groups, that new collective identities may take form without necessarily requiring the presence of a union organization or a formalized network of unionists for such a process to occur (Kelly, 2018). As recent studies on gig economy workers have highlighted (Chesta et al, 2019; Tassinari and Maccarrone, 2019; Cini and Goldmann, 2021), on occasion their mobilizations take place without the involvement of traditional trade unions, promoted instead by grassroots collectives and solidarity groups.

As is suggested in this chapter, the collective identities of the most active categories of new workers contracted through new digital platforms are forged both within and outside of the workplace. If social movement literature has focused on the importance of submerged networks and the institutional conditions for forging new identities (Melucci, 1996), some industrial relations scholars have, in fact, pointed to the importance of certain characteristics of the broader context and where the workforce socializes (Alberti and Però, 2018; Però, 2019). They claim that the focus on the workplace and on traditional trade unions only offers a partial understanding of contemporary collective identity formation processes. In particular, Atzeni (2016) distinguishes between two sets of factors which must be considered to account for such processes: 1) those concerning the organization of work; and 2) those concerning the socio-political context within which the worker activity occurs. While the first set of factors encompasses resources and opportunities related to the workplace (that is, technology, means of production, division of work, and so on), the second set refers to resources and opportunities stemming from outside that domain (that is, the social composition, culture, and worldviews of the workforce, whether it is an urban context, and so on). Research on digital platform workers has indicated that the latter may, in fact, affect the formation of a political consciousness among workers (Cini and Goldmann, 2021).

Despite the presence and persistence of a heterogeneous array of challenges, various digital work categories have been able to organize and even to collectively mobilize. It is thus necessary to understand how these mobilization processes have been possible across the different platform economy sectors, how workers developed forms of action, and how these actions contributed to new processes of collective identity formation. In this section, these processes will be disentangled and made sense of separately for crowdwork and on-demand workers, respectively. It is our assumption that the emergence of new labour collective identities in platform capitalism cannot be accounted for only by reference to traditional IR literature focusing on traditional unions, but rather such literature must be integrated with other perspectives accounting for both more spontaneous forms of mobilizations and broader collective identities bridging processes at the workplace and community level. These include work in the extended field of industrial relations, which encompass approaches that are normally not adopted in traditional labour conflicts, such as ‘labour process theory’ (LPT) (Thompson, 2010) and ‘radical political unionism’ (RPU) (Upchurch and Mathers, 2011) and also outside of it, such as social movement studies (della Porta and Diani, 2020). We suggest that an integration of these approaches is useful in order to grasp how collective action involving digital workers has contributed to the formation of new collective identities despite the unique set of challenges faced, such as those concerning labour

fragmentation introduced earlier. We focus here on two features related to digital labour, which partly derive from its fragmentation processes and which are traditionally seen by IR scholarship as particularly unfriendly to worker mobilization: namely, the absence of traditional forms of union organizing in the sector and the presence of technological innovation in the labour process. Taking these challenges into account, it is argued that an in-depth analysis of the social processes underlying the collective organization of digital workers on a workplace level is the most appropriate lens to adopt in order to understand the new collective identities that have emerged through action.

According to [Atzeni \(2010\)](#), the exclusive attention that IR literature has devoted to the role of traditional trade unions for the processes of worker organization is unsatisfactory for three reasons:

first, because it leaves outside the focus of analysis the majority of workers in the world who are employed in the informal sector of the economy where association by workers is difficult or forbidden; second, because it does not take into account unofficial walkouts in sectors where workers are formally represented, and third, ... it misses out the theoretical importance of workers' own capacity for mobilization. ([Atzeni, 2010](#): 6)

Both crowdwork and on-demand workers have mostly mobilized outside of confederal union structures by opting for alternative means of action ([Tassinari and Maccarrone, 2019](#); [Heiland, 2020](#)). LPT, with its focus on the workplace level, is able to draw attention to such alternative practices by providing a detailed account of the various forms of informal socialization and misbehaviour that arise organically in the labour process. Specifically, the concept of misbehaviour, which has been defined as 'anything you do at work you are not supposed to do' ([Ackroyd and Thompson, 1999](#): 2), helps us to interpret practices outside of the expected procedural behaviour that workers carry out informally during working hours to fulfil or avoid their job tasks with the ultimate aim of increasing their autonomy (of manoeuvre) at work. Informal practices, such as chatting with colleagues or the use of digital media during working hours, provide workers with a brief respite from the intensity of work and a sense of individual freedom. However, these can also be a way to socialize forms of resistance that, if regularly and voluntarily enacted, may lead to the organization of collective mobilization.

Whereas LPT is not particularly interested in exploring how workplace misbehaviour can take a political and collective form, social movement research can identify factors that may facilitate the occurrence of collective action ([Fantasia, 1988](#)), for instance, by recognizing the capacity of informal leaders and activists to trigger mobilization processes, regardless of their formal

role or political profile (Kelly, 1998). Moreover, social movement research helps in singling out the various resources, conditions, and opportunities available to workers that are not necessarily related to the workplace, but which may be potential sources of mobilizing power, such as the socio-cultural characteristics of the workforce or the broader political context.

Likewise, recent IR scholarship highlights the importance of non-workplace related features in the shaping and fostering of the organizational practices of workers (Atzeni, 2016). These studies explore the politics of labour by going beyond the workplace to include broader social dynamics, recognizing that an exclusive focus on unions only offers a partial understanding of digital worker mobilizations. More specifically, Atzeni focuses on the resources and capacities that derive from the everyday practices of workers, which are seldom considered in IR literature (for another valuable exception, see also Fantasia, 1988), but which are nevertheless central to mobilization processes.

Integrating traditional IR literature with other, more radical approaches helps to explain the occurrence of these mobilizations despite the presence of technological/organizational innovation in the labour process. For LPT scholars, the development and implementation of technology at work is not neutral but structured by antagonistic class relations and driven by imperatives of profitability and managerial control (Thompson, 2010). While not in a technologically deterministic way, they tend to see workers as 'subject to' technology, and to analyze their behaviour within the categories of control, misbehaviour, and work intensity, and as such have 'relatively little to say about the ways in which workers might individually and collectively shape ... technologies' (Hall, 2010: 170). In line with the 'social shaping of technology' (MacKenzie and Wajcman, 1985), social movement research helps to specify how and to what extent organizational and technological changes provide workers with new opportunities and resources for collective action, connecting structural transformations to the agency of actors by conferring the latter with an epistemic priority in explaining change (della Porta et al, 2020). The relationship between technology and workers in platform capitalism represents a case in point. The way workers interact with, and appropriate, new technologies can influence the organization of their work and, in turn, their capacity for collective mobilization. In this sense, social movement research extends this 'anti-determinism' by placing workers and their agency at the centre of the analysis (Griesbach et al, 2019).

By and large, social movement research provides us, therefore, with the analytical tools needed to identify the mechanisms which account for how various forms of collective action can arise and develop from specific contextual conditions, whereas LPT helps us ground such conditions in the capitalist labour process and in its antagonistic relationships. Combining these approaches allows for a better understanding of digital worker

mobilizations, based on unconventional resources and opportunities, as their integration helps us to identify and make sense of the different trajectories of mobilization that these workers have undertaken across various distinct sectors and distinct regions.

It is important to bridge the ‘workplace level’ with the broader community level in order to identify ‘from where’ digital workers have obtained their resources and which opportunities they have exploited to aid their mobilization. This can also allow us to explore ‘how’ they have utilized said resources and opportunities to shape new identities and cultures of solidarity. Here, the workplace level is not only the physical setting in which workers perform their tasks, but also the universe of sociality linked to their role as workers, which has been reshaped by connectivity. In this way, it is possible to address the everyday experiences and practices within, around, or outside the workplace that digital workers exploit for their mobilizing effort.

The main difference between the sectors of crowdwork and work-on-demand via apps that affect the action practices of digital workers does indeed relate to a workplace feature, that is, the actual location of their work delivery. While crowdworkers perform tasks online, workers on demand via apps perform offline and localized tasks. In short, on-demand work entails a physical and local-based component of the labour process that crowdwork does not exhibit. When performing their work tasks across the urban space, on-demand workers, such as Uber drivers or Deliveroo couriers, physically meet their clients and their colleagues. By contrast, crowdworkers, such as MTurk or Upwork workers, only have online interactions during their working activities, regardless of whether such interactions occur with their clients, their colleagues, or platform managers. As recent studies have highlighted (Heiland, 2020; Maffie, 2020), the difference in the kind of work delivery (local vs global) heavily impacts on the forms of actions, strategies, and feelings of collective belonging of digital workers across the different sectors. This section will focus in particular on the forms of action employed by digital workers and how they have contributed to shaping new processes of collective identity formation.

Both crowdworkers and on-demand workers have exhibited a high capacity for the use or ‘counter-use’ (Cini and Goldmann, 2021) of the digital communication infrastructure of their own workplace as a means of developing alternative sociality, to get to know colleagues, communicate with each other, and organize various forms of collective action. Social networks and social media sites, such as Facebook, YouTube, Instagram, Twitter, or WhatsApp, provide various communication and organizational opportunities for these workers. These include the creation of public profiles for the workers themselves or for events, searching for other colleagues and workers, the engagement in political debates, the establishment of their own private groups, and the possibility to move from a single-interaction

format to repeated, real-time interactions (Maffie, 2020). In short, online communication is one of the main ways of establishing sustained interactions, by creating and maintaining contact between individuals with similar needs and interests. The interactive structures of the Web 2.0 are particularly suitable for creating ‘digital communities’ (Tufekci, 2017), which allow platform workers to make their voices heard, establish employee-led discourses from below, and join like-minded people (Heiland, 2020). More notably, as Pasquier and Wood (2018) have noted, social media facilitates the involvement of digital workers in three main ways: 1) by strengthening a sense of collective identity among dispersed workers; 2) by developing solidarity around experiences of injustice; and 3) by providing self-organized workers with practical and emotional support. In other words, such a counter or alternative use of digital technologies may reduce the communication barriers between workers, helping them to overcome the various types of labour fragmentation discussed previously (see Chapter 3, Table 3.2).

The reasons for establishing and using Internet communities are similar for all forms of platform labour. Faced with the anonymous and automated coordinated working tasks, workers turn to colleagues in order to understand the platform-specific rules of the game (Wood, 2018; Maffie, 2020). Through this sense-making of the platforms’ algorithms and structures, workers seek to maximize their individual earnings and reduce their search time and workload. The primary purpose of workers engaging in these forums may even be the ‘joys of producing a common’ (Bauwens, 2005: 34), which are not necessarily conceived of as the basis for the organization of collective action per se, but which can, however, easily become sources of collective action (Salehi et al, 2015). In this fashion, workers build support networks to help manage the problems they encounter at work. To those without a shared workspace, online networks provide the most immediate place for these workers to gather. Within these networks, workers gain a wider view of their industry and form the types of social bonds that can translate into collective action, both offline and online (Maffie, 2020). In this sense, digital communities have the potential to build bonds between workers and create new forms of collective identity. These bonds may be able to alter the way people see their relationship with other workers and set the foundation for future collective action. Put otherwise, the same technology responsible for the emergence of platforms also appears to be connecting workers in new ways, and in doing so, may help workers realize the important role of collective association in their own work setting (Cini and Goldmann, 2021).

However, as will be suggested in the following sections, the fieldwork carried out for this volume demonstrates that crowdworkers and app-based on-demand workers ‘counter-use’ the digital communication infrastructure of their platforms with differing ultimate purposes. While crowdwork platform workers, such as those employed by AMT or Upwork, create

online fora or websites as a way of reaching out to co-workers in different countries or regions, with the aim of establishing an online interaction with them and exchanging help and information (Wood, 2018), on-demand platform workers, such as Uber drivers or Deliveroo couriers, adopt this type of communication as a way to meet their colleagues in person in the city or area of work delivery, often with the aim of planning offline collective actions (Tassinari and Maccarrone, 2019). In this sense, the latter are more likely to produce more stable and effective outcomes in terms of collective identity formation processes, as in-person interactions still prove to be a key aspect in keeping online activities meaningful and salient.

Solidarity in action among workers on demand via apps

Far from being tools of virtual isolation, digital media enables shared experiences of grievances, collective identity, and forms of solidarities for on-demand platform workers. What is more, and more importantly, they can also serve as a nucleus of collective action for the organization of a voice for these workers that goes beyond virtual spaces. In fact, strategies may be discussed online, colleagues are contacted and convinced online, but collective action is normally planned and carried out offline, as in the case of food-delivery couriers (Chesta et al, 2019; Tassinari and Maccarrone, 2019; Heiland, 2020).

Like crowdwork platform workers, on-demand workers use online groups for collective support, to communicate with each other, and to develop a sense of solidarity. In some American cities, for instance, Uber drivers have created closed Facebook groups:

The Facebook group is a closed group, allowing administrators to act as boundary managers who set the norms and behaviours that determine group membership. For example, when admitting a new member to the group, an administrator will post an announcement welcoming the new group member, asking how long they have been driving, and what kind of vehicle they use. As explained by both the moderator and other drivers, the group is interested in knowing the make and model of group members' vehicles in order to identify each other as they drive around town. Other routines have emerged as well, such as one driver posting daily weather updates, discussion of local events that may influence ride-hail demand (like local concerts or festivals) and if the app is busy or 'dead'. ... Sometimes customers contact drivers directly to schedule rides in advance. Airport runs are particularly lucrative, and if a driver cannot accept the ride, they often will post the job to the group. Although they are nominally competitors, as explained by

the group's founder, 'a rising tide lifts all boats'. Other times a group member will post about their personal transportation needs, such as one driver who posted that their partner needed a ride home from the hospital that evening. One driver I interviewed mentioned that he uses the group to make sure that family members have reliable transportation: '[m]y wife was driving to [city] and I needed someone to pick her up, so I posted on there that I needed someone to pick her up. I've done that a couple of times. It's good to be in touch with the other drivers in town'. (Maffie, 2020: 130)

Like AMT workers, these drivers also warn each other about potential customers to avoid, such as one particular customer who was leaving 'one-star' ratings. In several cases, conflicts with clients have increased solidarity among workers, leading to a sense of being part of a larger community with shared concerns and grievances (Wood et al, 2019).

However, in contrast to AMT workers, the creation of such digital communities is also aimed at coordinating driver meet-ups offline and organizing various forms of collective action. In mapping out the action forms of Uber drivers in the US context, it is again Maffie (2020: 131–2) who reports on the unfolding of these dynamics:

In 2016, the group engaged in one of its first coordinated actions toward Uber. At the time, Uber's application (app) began malfunctioning, preventing passengers from being able to request a ride. As some drivers were relying on Uber for income, the passenger app crashing was a serious economic challenge. A group administrator (admin) posted that the passenger app was not working, but that s/he had contacted customer support about it. Two days later, the admin posted a status update about the situation, informing the group that two of the admins had contacted Uber support to see when the app would begin working again. Despite their efforts, group members told me that it took weeks to resolve the issue; all the while, drivers received 'stock responses' each time they reached out to Uber. The group engaged in other collective actions, such as printing their own business cards; creating a group logo; and, frustrated by Uber's lack of advertising in the area, pooling their resources to pay for local advertisements.

While Uber drivers have used platform communication infrastructure to organize offline gatherings and forms of collective action with the aim of addressing moderate and pragmatic demands to the company and certain clients, food-delivery platform workers have instead 'counter-used' this infrastructure in order to organize mobilizations and disruptive forms of collective action (Cant, 2019; Tassinari and Maccarrone, 2019). The range

of action tactics adopted by couriers was, for instance, rather broad across Europe: from small demonstrations to the choice to carefully respected traffic laws, from circling company buildings to distributing leaflets in the restaurants that use the platform, from striking to occupying company offices, from refusing to take to the streets in instances of bad weather conditions to marching with activists in solidarity, and so on (Heiland, 2020). With legal avenues either formally closed or financially unviable, and, more importantly, without the support of traditional trade unions, these workers have been forced to explore alternative methods to improve their working conditions.

In the British context, for instance, such unconventional dynamics of mobilization have involved Deliveroo and Uber Eats workers, who staged ‘digital wildcat strikes’ against their companies between 2016 and 2018. It took Deliveroo couriers just a number of hours to organize their first stoppage. Similarly, drivers from the company quickly gathered in picket lines around Deliveroo’s recruitment office when they learned that the company was trying to hire strike-breakers (Cant, 2019).

British food-delivery couriers have been particularly adept at using social networks, not only as a means of communication beyond the reach of the managerial eye, but also, and more importantly, as organizing tools for their offline protests. The pre-existing skeleton structure of WhatsApp/Facebook groups operated as the basis for couriers’ embryonic solidarity (Tassinari and Maccarrone, 2019). Collective action has relied on turning those networks from chats that focused on helping each other out and sharing jokes into tools that could be used to fight corporate organizations. In his book on the British food-delivery mobilizations, *Riding for Deliveroo* (2019), Callum Cant depicted how the Brazilian Mopes, a combative component of the food-delivery workforce, have been able to employ various forms of social media, and especially WhatsApp, to stage strikes on a regular basis. In his words:

Their WhatsApp group chat was the origin point of calls for strike action on the first Saturday evening in February. When the message started getting out there into other chats and being discussed at the zone centre, other riders seemed to agree that action had to be taken soon. There was no time to waste. Before long, details were being communicated back and forth, and the strike was gradually endorsed by more and more of the workforce. (Cant, 2019: 119)

As has also been shown in our own research on the food-delivery courier mobilizations in the Italian context, these workers have been able to ‘counter-use’ the communication structures of their labour process (that is, the smartphone and the WhatsApp official chat, created by the food companies to communicate with the workers) as a means for facilitating their collective

mobilization. In doing so, Italian couriers have not simply resisted such devices, but actively used them with a different purpose from that originally intended by the company management (Cini and Goldmann, 2021).

All of our interviewees made it clear how the smartphone was (re)utilized by workers as a means of collective organization and, thereby, of (offline) mobilization. Aside from the official platform apps, management relied heavily on WhatsApp chat groups in order to coordinate shifts and ensure delivery of the service. The affordances of the app, namely the availability of the contact information of all employees present in the group, allowed the couriers to create alternative chat groups which were used to coordinate political activities, such as organizing assemblies, protest events, and digital strikes. As such, although the couriers have not managed to manipulate the official service delivery apps, they have nonetheless illustrated their creative capacity to transform a managerial tool into a critical resource that furthered the bottom-up worker mobilization process. As effectively summarized by a courier from Bologna: “We have chats where we assess the situation, we solve problems and we organize ourselves” (IC3). Meanwhile, another courier from Bologna described the various activities carried out through the use of WhatsApp: “We used the [alternative] chat to coordinate ourselves in any situation. Calling for assemblies, finding out if cycle repair clinics are open, asking for mutual aid. These are the things on which we focus most. Sharing knowledge and coordinating action. It helps to build a feeling of collective solidarity” (IC10). In short, the alternative WhatsApp chats were used to expand the network of militant workers and to organize collective activities. As summed up by a courier from Turin, “In the [alternative] WhatsApp group, we add any workers that we occasionally come across. Now there are a lot of us. We use that chat to organize collective activities and do various things” (IC8).

In creating new WhatsApp chats for and among workers, Italian couriers have shown a high capacity to exploit a workplace technological device, the smartphone, which is apparently hostile to their solidaristic communication activities, and transform it into an effective resource for their collective organization. This has been made possible by a repertoire of action that combined physical and virtual actions, digital and real spaces in the city.

Part of the success of the Italian courier mobilizations has been attributed to their capacity to live in and appropriate city squares, as not only the space where these workers wait for client orders, but also the location of their encounter and mutual identification. Indeed, most couriers began to consider the square as the main place to get to know each other. In these spaces, they have socialized and developed a feeling of group identification and collective solidarity, constituting – as has been seen – the precondition for the organization of any kind of collective action (Pizzorno, 1993; Polletta and Jasper, 2001).

As mentioned by several interviewees, it was precisely in these situations that workers began to develop a shared collective identity that linked claims from previous experiences of precarious labour with student mobilizations, aspects that were common to all the mobilizations investigated in Italian cities. In Turin, for instance, an interviewee remarked how, “since my first days of work, we have always met with other colleagues in Piazza Castello. It was in these moments that we started to get to know each other” (IC11). The couriers were explicitly aware that the physical space of the square played a crucial role in the process of collective identification, during and outside of working hours, and was key in transforming digital coordination into a real mobilization. As stressed by an interviewee from Milan: “in the beginning we had several meeting points. This was how we started to get to know each other. These were the spaces where we used to wait for the clients’ orders and where we used to start and end our shifts” (IC12). On the same issue, a rider from Bologna spoke explicitly of couriers’ capacity to create and develop spaces of encounter and association among themselves around the work shifts. In his words: “There are no places [meeting spaces] outside those we create ourselves. The same holds for the other cities. Before and after the work shift, we have established where to meet. Here [Bologna] we have Piazza Maggiore, Piazzetta delle Mercanzie and the university area around Via Zamboni” (IC3). The square (or the streets) as a workplace, have also provided couriers with a public (and media) visibility, which has served not only to reinforce their ties of solidarity but also to build new forms of solidarity by blurring the worker/customer division. More specifically, their public visibility has helped them to develop social and symbolic connections with customers and to bridge the divide between workers and consumers. Several couriers recalled similar stories of solidarity after a strike, as this Bologna-based courier described:

‘Yes, many customers told us that they were not aware of what was behind it all; they only saw you riding. Then, they get closer and even give you a little extra tip. They are more sympathetic. If it rains or snows, they tell you: “You know, I’m worried about you, next time I’ll avoid [ordering]”. Even during the strike, many stopped and took our flyers. In short, they know us now.’ (IC6)

These processes of collective identity formation were facilitated by the presence of a political tradition of precarious worker self-organization, which helped the couriers to opt to organize themselves rather than to seek the help of traditional unions or other such groups (Cini et al, 2021). In particular, we found that in all the cities investigated the persistent political culture of radical activism favoured the emergence of autonomous collectives or informal unions as the privileged organizational form among food-delivery couriers.

In Turin, Milan, and Bologna, couriers set up self-organized collectives, which benefited from the material support of the social centres and the occupied spaces active within the local urban context (Caruso et al, 2019). In Turin, the workers used an occupied building, the Cavallerizza Reale, to hold meetings, promote fundraising activities, and set up a bike clinic. In Milan, self-organized couriers received the support of activists from the network of San Precario and used the infrastructure provided by a social centre, Piano Terra, to organize their activities. Similarly, in Bologna, the couriers found support from associations and social centres like Ritmo Lento, L'Altra Babele, or Lâbas to host meetings and organize mutualistic activities such as bike repair clinics.

The connections between food-delivery couriers and these types of associational and militant milieus were instrumental in bringing about the processes of collective identity formation. Indeed, these spaces have been fundamental in helping couriers to overcome labour and legal fragmentation imposed on them by their working tasks and contracts. The previous experiences of activism of some couriers contributed to elaborating general claims, building a shared 'trans-platform' identity and organization, as well as demanding worker rights that were denied to them by the status of the self-employed strategically defined by the platforms.

In terms of conflictual repertoires, couriers have consciously adopted a strategy of 'brand shaming', a practice explicitly derived from the tradition of social movement unionism (Chesta et al, 2019), which consists of attacking the public image of the platforms with the aim of mobilizing public opinion, and specifically consumers, in support of the workers and, thus, indirectly damaging it economically. Often used in various activities of critical consumption (Balsiger, 2014), strategies of 'naming and shaming' rely on the damage they inflict on the image of big corporations. It is, in fact, precisely the strong symbolic component of food-delivery platforms, one of the central planks of the business model through which they achieve profit, that has provided couriers with such a weapon, and which has made the framing by couriers of their opponents a key aspect of the mobilization (Snow and Benford, 1988). Indeed, the negative publicity created by the activists is all the more damaging as these companies also seek to make a profit by projecting an image of fresh, 'nice', and environmentally friendly business practices, thanks to the fact that their workers operate on bikes. As highlighted by several couriers, such as one interviewee in Bologna:

'Utilizing social media is the first step to gaining visibility and creating pressure. ... To shed light on our conditions, we must be visible: even *Report* and *Presa Diretta* paid attention to us. We use social media [by shaming companies' policies] to show up the hypocrisy of platforms. They must realize what we are and what we are able to do. Now the

public opinion knows us and is aware [of platforms' hypocrisy]. For us, this is very important, as it's also a form of interlocution with the media.' (IC7)

The ability of couriers to use disruptive communicative strategies has not only resulted in direct threats or damages to platforms, but has also contributed to shaping a new public perception of workers, which has indirectly reached citizens, users, and consumers. The claims that have emerged and been produced through protest events have contributed to spreading a different narrative of food-delivery couriers, thus promoting the development of an autonomous collective identity of precarious workers.

Given the strong networks and resources of the courier leaders, who had shared previous experiences in precarious mobilizations and student activism, food-delivery workers have forged an inclusive collective identity that links their situation to more general claims regarding other categories experiencing inequalities in the contemporary economy (migrants, students, precarious workers in general). Their social movement type of unionism is at the same time the result of their multiple membership of urban collectives as well as an aspirational goal aimed at linking their struggles with a broader critique of the inequalities generated by platform capitalism in general. Part of these dynamics regarding last-mile urban logistics is also visible in other sectors of delivery. Evidence from the first cycle of contention at Amazon logistics in Milan have displayed some similarities with the food-delivery sector. Drivers working for subcontractors operating for Amazon faced challenges such as labour fragmentation and new forms of algorithmic control, however, in spite of this they were able to collectively mobilize. Although, it must be noted that the outcomes in terms of collective identity in this context also displayed substantial differences. One of the key aspects for the success of the mobilization has been the capacity of workers to use traditional forms of strikes and actions, such as blocking volumes of deliveries through pickets outside Amazon stations, where parcels are stored and distributed to the drivers. These traditional forms of strikes, with the physical presence of workers outside the stations, allowed for a twofold collective recognition of strength: both in the public mind and among the workers themselves. Furthermore, it made it possible to overcome the condition of individualization at work, with workers usually spending eight hours per day in a van driving throughout the city, with no collective spaces for sociality except for few moments at the beginning of the day and at the end of their shifts.

The first strike at Amazon logistics in the Milan area took place in May 2017, with a rally of workers in front of the warehouse in Origgiò, a strategic site where packages are brought and prepared to be distributed to the many warehouses around the country. Workers condemned the 'murderous time schedules and illegal work' (*La Repubblica – Milano*, 11 July 2017). While

declaring that the company imposes unsustainable workloads (up to 14–15 working hours a day), the workers also denounced the use of semi-illegal and illegal work times to complete shifts, which are unsustainable for service providers and workers. If the presence of illegal companies or bogus cooperatives is a common feature in other complex supply chains in other logistic sectors (Bologna and Curi, 2019), in the case of Amazon case there are a number of examples of service providers that employ workers through subcontracts. The impossibility to adapt to the flow of Amazon workloads, which, thanks to promotions like Amazon Prime Now, is constantly increasing, leads service providers to make use of irregular work or to use rhetoric which mystifies the employment relationship with new workers. As one of the main participants of the driver strikes declared:

‘They [the service provider for Amazon] tell us: “We are a start-up. We are new; let’s help each other.” They keep telling us that they’re a start-up. Still now, after two and a half years, they keep saying this. The route is paid about €200/210 [by Amazon]. The service provider pays the worker, pays for the van, the gasoline, and then it keeps the rest. This system is still in operation, they can’t really make it fit with that kind of payment. ... So, they use these magic tricks to survive.’ (ID3)

These strikes, which started spontaneously with the participation of 70 workers, were aimed at achieving a ‘first agreement in the belly of the giant’ (*La Repubblica – Milano*, 28 June 2017), and also contributed to a process of collective redefinition of their working status. In many protest events, such as that at the warehouses in Affori and Origgio on 27 June 2017, drivers criticized the new contractual framework in which they are considered as postal workers, thus misrecognizing their skills and underpaying their work (*La Repubblica – Milano*, 28 June 2017).

In parallel to these episodes, new protest events spread to other Amazon poles across Italy, such as the worker strikes at the warehouse in Castel San Giovanni near Piacenza during the ‘Black Friday’ event in November 2017, or again in the Milan area in September 2018, in Origgio, Affori, and the new Amazon station in Buccinasco (*La Repubblica – Milano*, 14 September 2019).

Gradually, the wave of strikes grew in size and in the generality of its claims, which had initially been problems related to specific stations and subcontractors, to a point where solidarity was achieved at the regional level. The cycle of protest symbolically peaked on 24 February 2019 with the declaration of the first regional general strike of Amazon workers in Lombardy, an event in which Maurizio Landini, who had just been elected general secretary of the main Italian union, the CGIL, took part (*La Repubblica – Milano*, 25 February 2019). At the same time, these initial achievements contributed to reinforcing a collective recognition of their

status as workers, that of logistics operators with specific professional skills and contractual rights.

If the forms of the struggle are quite traditional – a cycle of strikes which revitalizes a traditional union and pushes it towards more conflictual tactics – the novelty emerges in the claims expressed by new workers mobilizing for the first time. Throughout this first cycle of strikes, the claims dealt with interrelated aspects of both pragmatic and identity issues. The workers stated that the introduction of algorithms in a highly fragmented system of employment relations is directly tied to a strategic misrecognition of their worker status. Corporate discourse is indeed denounced as not only visible in symbolic aspects, but also as concretely denying the status of logistic workers, thus lowering salaries and relative obligations and rights (such as workload limits, working time, and insurance against risks regarding the carrying out of specific deliveries).

Algorithms are presented as an attempt not only to control working operations, by reducing delivery times and facilitating the routes, but also to lower the professional status of workers who, in being asked to adapt to and execute what is codified by algorithmic prescriptions, are declassified as pure executioners.

In the case of Milanese drivers, knowledge of the city and the territory is at the heart of their ‘working knowledge’ (Kusterer, 1978). The technological standardization of algorithms is not only a source of workload increase, which accelerates the pace of work and produces new work-related risks, but above all it expropriates skills and knowledge owned and produced by workers. Therefore, the specific design of Amazon’s algorithms is further contributing to fragmented labour and the denial of workers’ rights, such as status recognition and relative rights and retribution.

If individualization at work, contractual fragmentation, and the diverse background of the drivers would seem to constrain the opportunities to develop a shared set of grievances and conditions for collective action, some elements linked to worker power (strikes that physically block deliveries to Amazon stations, slowdowns, and so on) have contributed to raising awareness among workers about the efficacy of collective action. This has produced a twofold dynamic: while the mobilization has attracted new workers towards forms of collective participation and unionism, it has also pushed unions to adopt more conflictual repertoires. Aggregation was facilitated by the initial establishment of pragmatic and specific goals. In the course of the mobilization many drivers also discovered the organizational and political expertise of traditional unions in the logistics sector and sought their help. As a worker recalled:

‘Before, I was working for a delivery company, then I worked in food-delivery, for a platform, but it didn’t work well. I addressed the

unions with my concerns, to solve these problems and then I met an old colleague with whom I had worked for the first delivery company. He sent me to a CGIL union representative who told me he needed a representative in a station and I accepted.' (ID2)

Complaints to the unions are, however, limited to claims about bad working conditions and low salaries. Two interviewees show how the revitalization of unionism can be defined by a specifically limited collective identity, that is, the capacity to give direct answers to practical needs and specific problems linked to work. As shown in the following two excerpts, in this sense politics is seen as either too removed from the direct experience of workers or as a source of potential divisions among workers:

'I am in the union but I do not belong to the Left. When we debate about politics, I try to keep my thoughts to myself because I am here for my colleagues, for the job, to defend workers! Political positions are not my area of competence and in my opinion it's too big: I don't even want to take part in these discussions!' (ID4)

'We, the Company-level Union Representatives (RSA), we have no colour. We are all colleagues. I have no party-affiliation. I have a political opinion, but here, among us, Cisl, Uil or CGIL ... for us it is a guarantee to have a union that can defend us. Among the RSAs, we are united, there's cohesion. Now we see all the same problems and we are all together.' (ID3)

While the first cycle of contention at Amazon logistics in Italy has shown the revival of a new unionism that has partly overcome the individualization and fragmentation of labour in a sector deeply affected by digitalization, a clear outcome of the mobilization has also been the emergence of a new collective solidarity among workers. Starting from a critique of the degradation of working conditions, this has also triggered a process of collective recognition of a new worker power against the deskilling processes of the algorithmic management. However, the recognition of a collective identity, in terms of common interests and worker status, was limited to the sphere of the workplace. The capacity to combine both traditional and new repertoires of action, such as striking and blocking deliveries out of physical spaces like Amazon stations with strategies like the slowdown of work pace while delivering, contributed to the formation of a collective actor that successfully laid the foundations for a bargaining system and brought about the first agreements, such as the recognition of logistics contracts. These actions contributed to overcoming the individualization and fragmentation of the workforce, although they were partly limited to the workplace and fertilized sectors of the traditional unions.

Solidarity in action among crowdworkers

Dispersed across different areas of the globe, isolated from a physically shared workplace, exposed to invisible competition, barely protected by traditional labour legislation, crowdworkers have limited opportunities of sociality and thus, their possibilities for collective action would appear to be quite limited. It is not unusual to view these workers as characterized by individualized self-perception, thus not conducive to producing a collective sense of identity. Nonetheless, various forms of resistance have emerged, often starting in online forums where crowdworkers meet, socialize, and support each other. While several categories of these workers may work alone and enjoy the new opportunities of entrepreneurialism offered by this industry, when a conflict with a customer occurs, they are often unaware of their responsibilities or how to handle the situation. Without co-workers or a union to ask for support, such workers 'turn to their most immediate community: an online network like FB. Once part of this group, however, many find that they share grievances with other [workers] and enjoy the comradery and support of their digital colleagues' (Maffie, 2020: 132).

In Wood et al's (2019) study of micro-task workers, the authors argue that workers use digital networks for mutual aid, such as providing feedback on projects. Moreover, some of these workers have turned such online spaces into places for collectively voicing their outrage. In this respect, the most emblematic case of alternative usage of the platforms' communication infrastructure in crowdwork is represented by AMT. AMT workers organize various forms of collective action on digital networks. Indeed, aside from Amazon's website and networks, these workers have begun to participate in an ecology of fora, employer review sites, and job-sharing platforms. In particular, tens of thousands of AMT workers have congregated on two major worker-run web forums where they share advice with one another, negotiate the norms of work, and strive to establish more interactive and participatory relationships with employers. One of these worker-run web forums is Turkopticon, a browser plug-in for workers to exchange assessments of requesters and their tasks, allowing a low-level form of digital strike action. Through Turkopticon, AMT workers have created forms of collective support, helped colleagues perform their tasks, and, on occasions, coordinated some forms of work refusal. For example, coordinating through Turkopticon, they were able to write a collective letter to Amazon's Chief Executive Officer, Jeff Bezos, calling for better working conditions on the AMT platform. On this forum, more experienced AMT workers helped onboard newer workers and provided them with support (Irani, 2015).

These acts of mutual aid may have sparked an interest in some AMT workers in joining labour unions. Through the process of mutual cooperation, some

of these workers seem to have even developed some forms or feelings of proto-unionization as, according to an activist:

When we first began Turkopticon, the reaction workers had was: ‘We don’t want to be in a labor union. Is this going to turn into a union thing?’ Turkopticon is not a labor union and was not founded with formal unionization in mind. ‘But over the years, it seems workers have become more open to how unions can help them. They see how recalcitrant *Amazon* has been on making changes.’ (Irani, 2015: 226)

In contrast to the mainstream public narrative, which sees platform workers as enjoying a condition of self-employment with flexible working hours, several of these workers have instead begun to see the platform companies for which they provide their services as direct employers. They then become a target in their struggles. As highlighted in the earlier theoretical discussion, it seems that these workers are starting to express and publicly convey the structured antagonism underlying their relationship with the platform. A long extract from a study by Wood and Lehdonvirta (2021: 1388–9) follows, which illustrates how this process of solidarity building by platform workers, manifested in a kind of political hatred vis-à-vis the employer/platform, unfolds in a very blatant and radical way (the quotes from worker interviews in Wood’s text are in *italics*):

During our research, one of the largest remote gig economy platforms, which we refer to as ‘GigOnline’, doubled its fees for many gigs from 10% to 20% of the gig’s value. In response, thousands of workers voiced their opposition via social media ... workers signed an online petition in protest of the fee increase. The informants explained how these acts of posting on the forum or signing the petition were driven by feelings of outrage at the perceived unfairness of the platform’s behaviour:

My blood was boiling. ... It just made me see red because they were taking us for fools ... they thought we were stupid (Gemma, writer and script editor; Liverpool UK)

I was reading through a lot of the responses ... it’s probably pretty charged ... people [were] getting angry on forums, ‘No, we don’t like this!’ ‘It’s not fair!’ (Karen, digital marketing; Birmingham UK)

It was this same feeling of outrage at an injustice which motivated those who signed the petition and which they then shared via social media. ... This anger was heightened by the platform’s poor communication and the perception that they were trying to mislead the workers:

I thought that they were full of shit. ... I didn’t think it was right. I thought they were abusing their [position] ... it was greed (Nick, video and audio editing; London)

The informants made clear that their posting on social media was not simply a form of individual voice. Instead, they explained how this event was experienced as a collective one undertaken collaboratively with their virtual co-workers:

You could feel the anger of the screen. So, it's just important ... that it was added to ... [and to] have a voice you know (Gemma, writer and script editor; Liverpool UK)

I was too emotional ... it was interesting to see so many people reacting ... then I realised that oh my gosh, we are all in it together. And some messages were really smart, there were a lot of interesting people doing ... different types of work but the same freelancing, the same type of job (Jean, e-commerce, website consultant, design; LA)

You read all the ... posts and you, you feel, you see all the anger that's building up in each freelancer that's posting (Raymond, programming; Manila)

In fact, the informants themselves often used the idiom of a 'protest' to describe this online event.

Decided to protest and raise my voice (Thomas, Programming, Ipswich; UK)

Just adding a voice to them ... million other voices. The same way people did on a tax march last week. Tax march doesn't mean much if there's only ten people, when there's a million people, people notice so I didn't think it would get responded to or read but I thought if I added one to those thousands, then it would help. ... It was a way of protesting (Chris, digital marketing; LA)

However, to recognise this event as an embryonic form of collective action is not to suggest that it was effective. Given the benefit of hindsight, our informants were generally clear that they did not expect the action to be successful. They simply had no other means by which to protest the platform's behaviour. As Matthew (voice actor, Liverpool) explained:

I didn't really think that it would change anything. It, it was just like, well, I've got an ability to have a voice, so I can use it.

LPT scholars argue that resistance in the workplace does not always take the same force or the same overt form (Ackroyd and Thompson, 1999). However, even the online actions that crowdworkers have undertaken to protest against the platform's behaviour can be considered as evidence of a structured antagonism between workers and their 'employers' in this sector of the platform economy. From letter-writing campaigns to collectively written pamphlets on minimum requirements for crowdwork, these workers have managed to make themselves heard and formulate political demands. 'These protests show that crowdworkers are indeed able to communicate, formulate political demands and act collectively, the difficult conditions limiting their action notwithstanding and have greatly contributed to a situation in which

crowdwork has become a political issue and subject of various initiatives for better work conditions' (Altenried, 2020: 151).

However, more generally, no study on crowdwork platform workers has so far highlighted whether and how these workers have been able to use online communication in order to go beyond the virtual space and set up physical and localized forms of gathering or association. In other words, given the globally dispersed nature of their work, crowdworkers seem to be doomed (at least until now) to mostly carry out online forms of action. This represents a clear obstacle to the rise of a more stable collective identity that goes beyond online communication and fora, although these spaces can become contentious sites that could develop into other, more physical areas in the future.

Conclusions

Bridging social movement and labour studies, this chapter has made two specific contributions to the growing literature on the new labour conflicts in the digital platform economy: one empirical, the other theoretical. From an empirical point of view, it has been shown how and to what extent the new worker struggles in digital platforms have been able to build specific collective identities, despite the presence of several conditions that are considered to be hostile to mobilization, and which derive in particular from the process of labour fragmentation associated with platformization. Workers did so by appropriating organizational resources from different types of collective actors whose presence has been crucial in explaining the specificities of their collective identity formation processes, with a more sector-oriented and union-led form in the case of Amazon drivers, and a more general and self-organized way in the case of food-delivery couriers.

If both social movement studies (Polletta and Jasper, 2001) and labour studies (Hyman, 1975; Kelly, 2018) have stressed the importance of identity processes as a precondition for framing collective interests, it has been analyzed here how in this first cycle of struggles in digital platforms, various forms of collective action have attempted to overcome the condition of labour individualization and fragmentation, by building new forms of solidarity among workers, producing different outcomes in terms of collective identity. However, by analyzing the different episodes of contention and collective action among digital workers, variations have been found depending on the different articulations between digital and physical spaces of sociality, which characterize the conditions of crowdworkers and on-demand workers via apps.

While in both cases, digital tools and the new channels of digital communication have allowed for the coordination of initiatives of mutual support and solidarity, the physical and traditional forms of interaction

have proved to be key factors in sustaining collective action over time and strengthening collective identities. Indeed, strikes and collective actions were more effective when linked to traditional repertoires, such as square sit-ins and critical masses (as in the case of food-delivery couriers) or pickets outside physical workplaces (as in the case of Amazon drivers). In this regard, just as with the pickets of the Amazon stations, the collective log-offs of couriers seem similar to traditional forms of strikes. Similarly, the strategy of slowing down deliveries revives the traditional tactics of pace reduction that were characteristic of industrial workers' action during previous cycles of mobilizations.

Crowdwork platform workers have been able to use online communication in order to build collective solidarity (Maffie, 2020), but given the globally dispersed nature of their work, they have mostly carried out online forms of action. However, the isolation of the virtual working environment is, for the time being, a clear obstacle to the rise of a broader collective identity, given the lack of physical spaces that would allow visible and impactful collective protest events to be organized and alliances with other collective actors to be constructed.

The physical location of the working activities increases the possibility of building solidarity links with movement organizations and unions at the local level. While food-delivery couriers have widely relied upon the organizational and political support of student and urban movement activists, Amazon drivers have received support from the traditional unions and inherited some more traditional forms of action.

Furthermore, our findings also demonstrate how such different forms of organizational appropriation have heavily impacted on the type of identity that the categories of workers have formed. While for crowdworkers the type of online organization developed into forms of mutual solidarity, without giving rise to broader definitions of contention, in the case of on-demand workers we have observed a variety of forms of mobilization that expressed different claims and frames. These aspects had a clear impact on the process of collective identity formation. Amazon drivers developed a 'sectional' and 'economistic' consciousness, which was consistent with the discourse of traditional unions. On the contrary, the alliance of food-delivery couriers formed with political activists has pushed them to seek to involve other workers and speak on behalf of the current generation of precarious platform workers. In this sense, the support of social centres and political activists has helped couriers to politicize beyond sectorial interests their working conditions.

From a theoretical view, this chapter has contributed to the revival of the historical and political debate on the role of collective identity as a key outcome of worker mobilizations and a key component in setting the elements of reciprocal recognition among actors involved in labour

conflicts and industrial relations (Crouch and Pizzorno, 1978; Fantasia, 1988) by aiming to making sense of the new labour conflicts in the platform economy. More notably, we have addressed this debate from the specific angle of social movement studies (Polletta and Jasper, 2001; della Porta and Diani, 2020), which has forced us to understand the concept of collective identity as closely linked to the process of collective mobilization. This process was located within a ‘solidarity in action’ framework, in order to emphasize the dynamic and processual components of workers’ collective identity. In doing so, we have drawn on Alessandro Pizzorno’s concept of struggle for recognition (Pizzorno, 1978a), thus looking at the development of group identification among workers in contentious collective action as the precondition for such a process of collective identity to emerge. Indeed, this process of identification has also been crucial in the identity-making of the various categories of digital workers that emerged from our research as capable of recognizing not only their existence as a collective actor, but also the nature of their interests as different from the definition put in place by platforms. However – and this represents our main contribution in this chapter – their identity formation processes have developed differently depending on the variation between digital and physical spaces of sociality. In particular, the specific political and social conditions within and beyond the workplace explain the variation in these workers’ capacity to build their own political identities and organize collective action.

Labour Conflicts in the Digital Age: Some Conclusions

Social movement and industrial relations studies: concluding reflections

Labour mobilizations have been springing up and spreading all over the world in recent years, marking a new era of worker resistance and labour unrest that have specific characteristics depending on their location and function in the world economy. This has even been the case in the so-called Global North, where labour conflicts had been considered to be pacified ([Arrighi, 1996](#)). The new geographical expansion of world economy and the rise of the new phenomena of capital accumulation in semi-peripheral and peripheral areas of the world triggered new forms of conflict and labour unrest ([Silver, 2003](#)).

In the recent processes of digitalization, some of these mobilizations have exhibited a new profile with regard to two crucial aspects: the sectors where they have taken place and the characteristics of the collective actors:

- They have arisen in innovative technological sectors of so-called ‘platform capitalism’ ([Srnicsek, 2017](#)), meaning in new sectors created (or revitalized) by the introduction of platforms. These are a techno-productive infrastructure that intermediate between producers and consumers, whose value-creation is based on the extraction and analysis of data.
- These mobilizations have been characterized by the adoption of innovative forms of action and organizing, involving atypical workers who developed collective solidarity through their online and offline mobilizations, which mostly occur outside of the traditional channels of trade union organizations.

The worker mobilizations addressed in this volume, which took place in the specific sectors of work on-demand via apps, developing then some

comparison with crowdwork, fulfil such criteria. Our study contributes to shed light on the peculiar forms of organizing and action as well as the identity formation processes of these workers. In particular, we have considered the mobilizations of AMT workers in the global context, and those of Amazon drivers and food-delivery couriers in the Italian context. Combining insights from social movement studies and industrial relations we have addressed three main areas of reflections: the structural transformations that trigger labour protests; their organizational forms, and the production of solidarity during collective action.

First of all, we looked at the changing forms of labour introduced by digitalization. Reflections on NSMs have departed from the observation of some changes in the main system of production, which have also been noted by scholars of industrial relations. In line with broad sociological analysis of structural transformation, social movements of the industrial society were considered to be declining and overcome by those related to post-industrial assets. Thus, Alain Touraine (1988) and Alberto Melucci (1996), in particular, looked at macro, societal transformations that moved conflicts from within the area of economic production into the area of social reproduction. While conflicts were still considered as a central engine of development, the main conflict line was singled out as pitting those in control of knowledge and the lifeworld versus those who resist that control. Recently, Marxist scholars of social movements have revisited NSM approaches in search of conceptual tools that would allow for transformation in production to be connected with the ideational conditions for mobilizations (Barker et al, 2013; Nowak, 2019).

During the same period, other influential scholars of labour have imported the resource mobilization approach from social movement studies, reacting to a dissatisfaction with the theoretical weaknesses of industrial relations in addressing questions related to the nature and meaning of conflict (Kaufman, 2010). In looking for ways to revitalize unionism in hostile environments, scholars of industrial relations have referred to social movement theory in order to find a theoretical framework to explain collective action and the role of unions in mobilizing it (Kelly, 1998). While this interaction would seem normal if one were to consider the shared ground of these two fields, it is, however, surprising how late and sporadic these interactions have been (Gahan and Pekarek, 2013). As Kelly (2018: 2) noted, 'Insofar as traditional IR [Industrial Relations] had a theoretical core it was arguably a weak and underdeveloped form of institutional analysis, centred primarily around collective bargaining structures and processes and around the legal institutions of courts and tribunals.' Furthermore, references to social movement research in industrial relation studies remained selective, with little attempt to interact with work that addressed unions from this perspective (Gahan and Pekarek, 2013). As a result, international relations as a discipline were influentially described by Kelly as still marked by 'the underdevelopment of theory and

concepts and the continued influence of government and state policy on research agendas'. The lack of a theory of power has especially jeopardized the understanding of 'why and how union power declined or by how much in the 1980s, and to what extent its decline could have been attenuated or avoided given different policies by one or more of the chief IR actors, including the state' (Kelly, 2018: 23).

A third stream of interactions is also notable in its potential (but not always implemented) capacity to speak to both labour studies and social movement studies. In particular, the work of Alessandro Pizzorno of the cycle of labour unrest in Europe in the late 1960s and early 1970s can aid the understanding of the connection between the transformation of the class bases of conflicts with a consideration of organizational traditions, the evolution of the repertoire of action, and the emergence of struggles for the recognition of emerging social groups. It was the latter that he considered as a preliminary step for the struggles on specific interests, given that social interests can only be assessed once collective identities are formed. In this sense, as he suggested, a first-degree exchange, aimed at the creation of collective identities, is a precondition for a second-degree exchange, oriented at achieving specific benefits and utilities. In this conclusion, the main results of our research will be summarized, along with a reflection on the structural conditions of the conflicts examined, their organizational forms, and identification processes in action. It will conclude by indicating the future challenges of this new research agenda on labour conflicts in the digital era.

The structural transformations of the digital workforce

The recent wave of digitalization and platformization of work is triggering new processes of labour fragmentation in global value chains, even though the changes triggered by economic expansion also create opportunities for new processes of labour recomposition (Silver, 2003). The multinational nature of big-tech companies like Foxconn indirectly favours the creation of a transnational workforce of migrant workers employed through precarious and temporary contracts in its various factory plants in various peripheries and semi-peripheries like Latin America, Asia, Central and Eastern Europe (Sacchetto and Andrijasevic, 2017). At the same time, Foxconn is the theatre of new transnational strikes like those carried out by American and Mexican workers in solidarity with the struggle of their Chinese counterparts that are demonstrative of the emergence of new forms of transnational solidarity and conflict diffusion, as can also be seen in the mobilization of South-Korean workers, which was triggered by the rise in Chinese worker conflicts (Chan et al, 2020).

Even though these cases show how big-tech multinationals still need an outsourced industrial workforce, as our research has shown, it is

misleading to only refer to semi-peripheries and peripheries as sites for the delocalization of old types of industrial production. Increasingly, with the spread of Internet technologies, platform capitalism is expanding into different areas of the Global South (Graham et al, 2017), thus producing a new workforce employed in 'gigs', characterized by growing rationalization, task parcelization, digital control, and surveillance through rankings and rating systems. In this sense, even if adapting to different socio-economic environments, digitalization is triggering similar dynamics in the Global North and the Global South. In both cases, many low-qualified sectors have been heavily transformed by digitalization processes, such as the urban logistics (that is, delivery and mobility services) with a new algorithmic control of work organization and remuneration systems that introduce new forms of fake self-employment and contractual fragmentation, as well as new identity-based protocols and rules regarding worker reputation and self-presentation through digital rating systems (Rosenblat and Stark, 2016).

The innovative features of technology that have an impact on work can be better perceived in the first instance by the workers themselves, rather than by actors outside the workplace. The history of labour shows how the lay experience of workers in the workplace can, to some extent, reveal aspects of working activities that are not readily perceptible to managers, technical designers, or external actors like platforms (Bruland, 1985). These have the potential to trigger forms of resistance in the daily routine of the labour process, as well as new forms of conflict which target the negative effects of the specific design and application of technology, such as the degradation of work (Braverman, 1974). In this regard, in line with the so-called resource mobilization approach in contentious politics (McCarthy and Zald, 1977), worker power and resources approach in labour studies provide for key explanatory factors for the rise of worker mobilization, as well as the variations in their outcomes (Silver 2003; Levesque and Murray, 2010; Cini and Goldmann, 2021). Despite the specificities of a workplace disrupted by digital technologies and platformization, worker power resources contribute to explaining innovation in the form of worker organization. While even the highly fragmented virtual world of Amazon Mechanical Turks is far from being characterized by total isolation, the mobilizations of food-delivery couriers, or those in other sectors of the logistics, point at the social infrastructure as offering important resources for collective action (Caruso et al, 2019; Stewart et al, 2020).

These resources may also be important in contrasting individualization processes that are put in place by platforms and new employers. Social movement theories show how collective action is not only based on the pursuit of specific collective goals, but also has the power to reveal new ones and to increase the generality of the issues at stake and broadening the range of the concerned actors (della Porta and Diani, 2020, Chapter 4).

Solidarity practices put in place by these new mobilizations and in the new experiences of cooperativism are reshaping the symbolic meaning of labour in a manner that has not previously been experienced. In attempting to overcome the displacement and dematerialization of working relations, as well as the unpaid labour and precariousness that is hidden behind the rhetoric of self-employment and entrepreneurialism, many mobilizations are reviving traditional core issues of the world of labour, such as subordination, contractualization regimes, and questions of control (Casilli, 2020). These are common issues for a large swathe of professionals and knowledge workers as well as for workers in low-skilled sectors like logistics and mobility.

Thus, the study presented here demonstrates that collective identities pre-exist rational interests being the very condition for negotiation (Pizzorno, 1978a; 1980). Therefore, it is essential for the analysis of the formation of the collective identity of platform workers to take into consideration their location at the intersection between the traditional physical social context and a specific digital space. The interrelation between these two dimensions triggers new obstacles, but also presents new opportunities to build forms of worker solidarity. Furthermore, the formation of collective identity has to deal with the challenge of labour recomposition beyond fragmentation and precariousness. These reflections emerge as all the more important in a phase in which forms of precarity extend to the very core of employment and affect the qualities of democracy (della Porta, 2015).

Our research has also highlighted the differences in the conditions and mobilization forms between the categories of digital workers that have been analyzed in detail. Legal fragmentation is as high in the on-demand sector as it is in crowdwork as, broadly speaking, gig economy workers are individually recruited by platforms or individually interact with clients in the absence of a shared legal framework (Aloisi and de Stefano, 2020). However, while global delivery workers, who often work from home, usually tend to be employed through the loose legal framework of the country of activity, on-demand workers normally take on the status of independent contractors (Heiland, 2020). Their legal fragmentation significantly limits the formation of a shared professional identity, potentially preventing the dynamics of group identification, which may lead to practices of political recomposition (Chesta et al, 2019).

Moreover, technological fragmentation is higher in crowdwork than in the local gig economy, as online work delivery is designed to adopt the most technologically advanced digital devices with the aim of physically separating workers from each other and reconnecting them through digital networks. By contrast, there is not a great degree of variation in organizational fragmentation between the two macro-sectors as a whole, and especially across each of them. This has a particular impact on those work categories that exhibit or require higher job skills and competencies, such as Upwork

and TakeLesson. As noted earlier, the structural organization of their labour process imposes upon these workers a harsh dynamic of competition in relation to several aspects of their working activities: in terms of the goods or services they deliver, the clients they may attract, and even their own labour power.

Spatial fragmentation, which is linked to technological fragmentation, is significantly higher in crowdwork than in the on-demand sector, as delocalization is the quintessential feature underlying the labour organization of crowdwork. In this sense, advances in digital innovation seem to prefigure the unfolding of a new international division of digital labour, in which workers from the Global South perform productive activities for digital companies in the Global North (Gray and Siddharth, 2019). In short, digital innovation appears to be one of the main drivers of the global process of labour delocalization (Casilli, 2020). While social fragmentation affects all sectors, it does so in diverse forms and with different effects.

Organizing collective action: a variety of forms of conflicts

The rise of the platform economy has attracted scholarly attention, due to both its implications for the future of work and to its potential as a locus of labour conflict. IR scholars have thus far mainly focused on the characteristics of the labour process (Gandini, 2019) and their potential for igniting or thwarting worker mobilization (Tassinari and Maccarrone, 2019; Wood, 2018). Although some scholars have noted the heterogeneity of the organizational practices chosen by platform workers (Vandaele, 2018), there has, however, been relatively little reflection on why platform workers have opted for different forms of organization. In particular, our research has pointed at important differences between the organizing approaches adopted by crowdworkers and on-demand workers in their mobilizations for fair pay and better working conditions.

In explaining these differences, we have drawn especially on social movement studies (della Porta and Diani, 2020) and on the more heterodox studies on IR (Alberti and Però, 2018), which stress the role of ‘non-workplace’ factors in explaining the mobilization practices of platform workers as well as their diversity. Combining these approaches, we have taken into account the broader social and contextual dynamics, such as the presence of strong community ties or the intervention of informal leaders and political groups, in exploring workers’ mobilization processes. Social movement literature has traditionally paid attention to factors such as the protest culture of a given country, the informal networks of activists of a given community, the presence of social movement organizations, and the

organizational tradition of mobilization (della Porta and Diani, 2020). Also, some research on IR has recently addressed the non-institutional socio-political context to explain social movement formation processes. Alberti and Però (2018), for instance, have identified the presence of strong, supportive, ethnic communities as important sources for the organizational practices of precarious migrant workers employed in the low-paid service sector in London. Other studies have emphasized the intervention of political activists and solidarity groups in the organization of mobilization processes in the gig economy sector and in the wider logistics sector in Italy (Chesta et al, 2019; Cini and Goldmann, 2021).

By adopting such a bottom-up approach, several IR scholars have started to explore the pivotal role of ‘new’ and ‘non-traditional’ labour actors in the organization of precarious workers. For instance, recent studies have analyzed the rise of ‘indie-unions’ in the UK, small member-led unions that have managed to organize precarious migrant workers in sectors such as cleaning and security (Però, 2019). These unions have also played a role in the organization of food-delivery couriers in the UK (Tassinari and Maccarrone, 2019). Moreover, there have been instances of self-organization by precarious workers outside of the framework of trade unions (Hyman and Gumbrell-McCormick, 2017). In the early 2000s in Italy, groups of self-organized precarious workers led campaigns in sectors such as publishing and airport services under the banner of the fictitious patron saint ‘San Precario’ (Murgia and Selmi, 2012). Although singling out different elements necessary for the mobilization to occur, all of these studies have pointed to the importance of non-labour, process-related dynamics in understanding contemporary labour conflicts. In our view, this consideration represents a much-needed rehabilitation of a bottom-up and self-organizing perspective in IR studies (Rizzo and Atzeni, 2020). In fact, taking into account the importance of non-workplace features helps to avoid economic or deterministic approaches according to which social processes of worker mobilization can be explained by focusing only on the transformations of the labour process (della Porta et al, 2022).

Worker self-organization and the support of non-traditional IR actors are even more widespread and common in worker mobilizations in the Global South. In a comparative study of Argentina and Tanzania, Rizzo and Atzeni (2020) highlighted the role of bottom-up organization in relation to two groups of precarious workers in the transport and delivery sectors of Buenos Aires and Dar es Salaam. They showed how the mobilization practices of precarious workers were dependent on the structural conditions of precarity and exploitation but were, at the same time, spatial and contingent, thus influenced by local and contextual factors, such as the spatial configuration of the neighbourhoods and the civic associations present in them. Likewise, Ford and Honan (2019) have explored the centrality of community

organizations operating at the urban level as a trigger for the mobilization of app-based transport drivers in Indonesia. In particular, in showing how the presence of these organizations enhanced the mobilization capacity and the degree of participation among the driver workforce, the study explained why grassroots mobilizations formed and flourished in Indonesia at the expense of traditional union organizing. In India, the automobile industry saw a considerable amount of labour unrest since the 2000s which were marked by the replacement of permanent workers in original manufacturers with an increasing amount of contract workers. In such protests, the role of the social community and of their informal networks has been crucial at different levels and in several respects. Indeed, throughout this period, the families of the workers were engaged in various roles: hiding the workers from persecution, providing food during strikes, and mobilizing for events in the rural areas. More notably, [Nowak \(2019\)](#) underlines how the support network of these workers at the local and regional levels comprised three elements: organizations and intellectuals based in New Delhi; organizations and families based in the non-industrial parts of Haryana; and workers and unions from the industrial belt itself.

By and large, these studies on worker mobilizations in the Global South suggest that, in order to understand the opportunities for collective organization within the current reconfiguration of work, a fruitful agenda for sociological research on the new labour conflicts should go beyond the study of the union form, *per se*, and include other dimensions of analysis ([Atzeni and Grigera, 2019](#)). While there is still a need to look at the specific dynamic of workplace politics, its linkages with the wider local community and with larger political mobilizations on a national and global scale have already proved essential in order to understand the developments of labour conflicts and worker organizations ([Nowak, 2021](#)).

In line with these studies, our research has in fact confirmed that the rise in new worker mobilizations across several sectors of the platform economy can be understood not only by going beyond a narrow focus on the workplace and the traditional actors in IR, but also by taking into account a broader set of social and contextual factors related to the mobilization dynamics ([Atzeni, 2021](#)). As a result, specific contextual and organizational resources must be taken into account in order to grasp the material processes of mobilization outside of the trade union channel. In this direction, we took a ‘bottom-up’ perspective on the collective action of workers ([Atzeni and Grigera, 2019](#); [Nowak, 2021](#); [Woodcock, 2021](#)), starting from real-world cases of mobilization in both work-on-demand via apps and crowdwork in order to explore the drivers behind the social processes underlying their different organizational forms and action repertoires. In short, we focused on the agency of platform workers, paying particular attention to at their contentious dynamics by identifying the resources and opportunities for

their mobilization to occur. In doing so, it has been possible to better grasp and to highlight the specific sources of worker power that are alternatives to trade union organizing and the workplace.

Building on this discussion, we pointed at another set of factors which had to be considered to account for the variety in the forms of conflicts among the platform workers investigated: those concerning the socio-political context within which these workers' activity was inserted. This set refers to resources and opportunities stemming from outside the workplace (that is, the social composition, culture, and worldviews of the workforce, whether they were in an urban context, and so on), but which nevertheless affects workers' mobilization practices (Cini and Goldmann, 2021). Such an extended view offered two advantages for the analysis of mobilizations in this new labour force: firstly, it provided a more agentic, worker-based and not union-centred, interpretation; secondly, it emphasized the importance of the socio-cultural context of mobilization, beyond the workplace, in which the relationship between workers and other social actors was central (Atzeni, 2016; Però, 2019).

Throughout our work, we have noted how a number of specific non-institutional features related to the environment in which platform workers were embedded contributed to shaping their organizing practices and understanding the wide variation in the cases under investigation. More notably, the organizational capacities and practices depended on social and political factors, which were located outside of the workplace dynamics. Firstly, it was noted how the presence of political activists, engaged academics, and social movement leaders equipped these workers with organizational skills and resources that enabled them to mobilize. For instance, online forums (such as *Turkopticon*), created by the joint effort between academic activists and politicized segments of the *Turkers*, have been a key organizing tool for sharing information, ideas, and help in the online community of these workers. Despite the fact that they are dispersed across the globe, the AMT workers have thus been able to address a number of shared, work-related grievances and, at the same time, challenge the unfettered power of Amazon. In the same vein, food-delivery couriers have carried out their collective action by relying upon the resources and opportunities provided by the key support of social centres, squatted houses, and solidarity groups in the areas in which their work delivery takes place.

Secondly, we observed how leadership, past experiences of militancy and community organizing provided workers with ideological frames of reference and established scripts for action by shaping their attitudes towards different organizational forms and the repertoires of action to adopt. So, we noted differences in the organizational models and tactics of action used by the two categories of on-demand workers we investigated: while the food-delivery couriers expressed a more radical and universalistic action repertoire, the

Amazon drivers adopted a more moderate and sectional repertoire. These differences are affected by the type of leadership supporting their mobilization. Whereas the mobilizations of drivers have been supported by a traditional trade union, the Filt CGIL, the courier mobilizations have been backed by a more informal coalition of actors, consisting of movement activists and solidarity groups. It is this difference in the political composition of the struggles that led to such a variety in the forms of organizing and conflicts.

Thirdly and most importantly, we highlighted important differences in the types of organizational models and the action forms adopted by crowdworkers and on-demand workers. While crowdworkers, such as those employed by AMT, have only been able to stage online forms of action and self-help, on-demand workers, such as food-delivery couriers and Amazon drivers, have also carried out offline forms of organizing and intervention in the areas where their delivery takes place. Food-delivery couriers and Amazon drivers have been able to transform their online networks and communities into localized and physical forms of action and organization. In this sense, our findings have shown how and to what extent the presence (or the lack) of physical social interaction among the workers themselves has been crucial in defining their mobilization forms: the distinction between local/offline vs global/online work delivery has heavily affected the ways in which these workers have organized their collective mobilizations.

Moreover, and relatedly, the local physicality of the work delivery also has an impact on the disruptiveness of the platform workers' action repertoire. Indeed, the disruptive potential of on-demand worker mobilizations, especially those carried out by food-delivery couriers, has been considerably higher and more varied than those carried out by crowdworkers. Their capacity to stage digital strikes and street demos, as well as their brand-shaming tactics on social networks, aimed at contesting the power of the platforms for which they work, has represented a momentum of high political confrontation by these workers. Such a high confrontational political attitude would not have been possible without the presence of enduring relationships of trust and comradery among workers, which can only be developed through physical and direct contact.

Solidarity in action: the formation of collective identities among workers in the digital age

Organizational forms are linked to repertoires of action, and they both influence the emerging collective identities. From a theoretical perspective, we have examined the rise of new solidarities in the platform economy by bridging social movement and labour studies ([della Porta and Diani, 2020](#)). This has been done by stressing the importance of the formation of collective identities (Polletta and Jasper, 2001), as well as how they developed

specifically in new areas of digital work. We have especially looked at the relevance of the practical experience of the struggle in the development of what has been defined as practical knowledge. Indeed, as [Piven and Cloward \(1977: 20\)](#) noted, ‘peoples experience deprivation and oppression within a concrete setting, not as the end product of large and abstract processes’. Collective action has, in fact, itself been considered as transformative in helping workers to make sense of their own conditions of exploitation, but also of their potential capacity to change their own conditions ([Barker et al, 2013](#)). Consciousness, therefore, emerged from the need to address practical problems as ‘experience is the seedbed from which consciousness grows’ ([Cox and Nilson, 2014: 7](#)). Collective action allows, thus, for a combination of fragments of knowledge into an understanding of one’s own conditions ([Wainwright, 1994](#)).

This means that protests might act as a critical juncture, producing material and symbolic resources for collective action ([della Porta, 2020](#)). As [Rosa Luxemburg \(1906\)](#) noted long ago, class consciousness tends to develop in action: the massive general strike in southern Russia in the summer of 1903 started with ‘many small channels of partial economic struggles and little “accidental” occurrences’, then ‘flowed rapidly to a raging sea, and changed the entire south of the czarist empire for some weeks into a bizarre revolutionary workers’ republic’ ([Luxemburg, 1906](#)). In this example, action itself assumed a key role in creating the conditions for an activation of class politics as the political education, class consciousness, and organization of the proletariat ‘cannot be fulfilled by pamphlets and leaflets, but only by the living political school, by the fight and in the fight, in the continuous course of the revolution’ ([Luxemburg, 1906](#)). Action itself, therefore, assumed an extremely important role in creating the conditions for an activation of class as consciousness proceeds in parallel with organization in action, since: ‘The most precious, lasting, thing in the rapid ebb and flow of the wave is its mental sediment: the intellectual, cultural growth of the proletariat, which proceeds by fits and starts, and which offers an inviolable guarantee of their further irresistible progress in the economic as in the political struggle’ ([Luxemburg, 1906](#)).

The novel element of the platform has influenced the ways in which collective action transformed latent oppositional sentiment into forms of solidarity ([Fantasia, 1988](#)). This intersects with the concept of collective identity, which is at the same time a necessary precondition for the emergence of collective mobilizations, as new actors first become involved in struggles for recognition, before being able to mobilize with specific claims, but is also strengthened by the action itself ([Pizzorno, 1978a](#)). Thus, while workers’ solidarity triggers a process of collective identity formation, at the same time it develops in action and in relationship to a process of construction of alliances and targets. Indeed, pre-existing social networks and organizational

resources were relevant in the elaboration of specific identities. However, we observed that identity formation processes have developed differently depending on the variation between the digital and physical spaces of sociality. In particular, the specific political and social conditions within and beyond the workplace explain the variation in the capacity of these workers to build their own political identities and organize collective action.

In addressing this question, our research has shown the importance of non-institutional resources for the mobilization capacities of platform workers by highlighting how workers' pre-existing networks contributed to their mobilization processes and the collective identity formation processes, being also reflected in the different dynamics of solidarity among platform workers. Labour fragmentation and worker isolation varies in fact substantially depending on the specific contexts in which digital work is performed, but a significant variation has been found between crowdworkers and app-based on-demand workers. It is among the latter category of workers that the most visible and impactful aspects of collective contention have been found. This was also evident in the empirical cases presented here on food-delivery couriers and Amazon drivers, who mobilized by appropriating organizational resources from different types of collective actors, whose presence was crucial in explaining the specificities of their collective identity formation processes.

Previous organizational resources and memberships at the community level were, indeed, important in triggering collective processes of identity formation, considered as a necessary condition to overcome labour individualization and fragmentation. By looking at the intertwining of digital and physical spaces of sociality, we have outlined the variations between crowdworkers and app-based on-demand workers in terms of their capacity to build sustained forms of contentious collective action. Although in both crowdwork and work-on-demand via apps, digital tools of communication, such as autonomous social media accounts and WhatsApp collective chats, have been important in constructing new networks of mutual support and solidarity among workers, the possibility of physical, face-to-face forms of interaction proved a key factor for organized forms of collective protests to be sustained over time, and that eventually contributed to the formation of collective identities.

Among app-based on-demand workers in particular, digital communication tools became part of an 'electronic repertoire of contention' (Rolfe, 2005). Food-delivery couriers developed new forms of strikes and collective actions by using social media accounts not only to advertise traditional repertoires like square sit-ins, critical masses, or street demonstrations, but also forms of digital boycotts such as undertaking 'collective log-offs' at specific peak delivery times. While these digital repertoires readapted traditional forms of labour protest to the new environment of digital platforms, in the case of

Amazon drivers the ability to physically block deliveries was more relevant and had more of an impact than any other form of action.

Collective actions, such as pickets outside physical workplaces like Amazon stations, build upon the tradition of different forms of strikes. Along with the collectively coordinated slowdown of deliveries, they can be seen as a renewal of traditional forms of pace reduction in performing working tasks performed by the working-class movement in Fordist factories (Regalia et al, 1978).

While crowdworkers have demonstrated their ability to autonomously use online communication channels in order to create mutual help groups and thus initiate a process of collective solidarity, they have discovered several challenges in developing forms of contention, given their globally dispersed nature. Finally, while these online forms of action show that crowdworkers are far from being totally isolated, the isolation of the virtual working environment can for now be considered a clear obstacle to the rise of a broader collective identity.

In sum, the existence of a physical workplace, where working activities allow for the creation of spaces of sociality and direct communication among workers, still plays a relevant role in the creation of collective identification. That working activities take place in the same physical location increases the possibility of building solidarity links among workers, developing collective strategies, and eventually looking for support and alliances with movement organizations and unions at the local level. This is visible in the case of the food-delivery couriers who, relying on the organizational and political support of student and urban movement activists, developed a form of informal unionism. This in turn created a new form of grassroots labour activism that linked issues that were specific to platform-based gig work with broader frames related to the platform economy at the urban level, as well as the problem of precarious work in general. This is different to the example of Amazon drivers, who sought out an alliance with the long-standing unions operating in traditional sectors such as logistics and consequently performed more conventional types of action, with the specific aim of introducing the first forms of collective bargaining into their sector.

In this regard, we observed how collective action develops progressively through organizational appropriation, demonstrating the influence not only of challenges and constraints but also of agentic capacity in shaping new types of identity. While for crowdworkers this type of online organization developed into forms of mutual solidarity, without giving rise to broader definitions of contention, in the case of on-demand workers a variety of forms of mobilization was observed, each expressing different claims and frames. These aspects had a clear impact on the process of collective identity formation. Amazon drivers developed a 'sectional' and 'economistic' consciousness, which was consistent with the discourse of traditional unions.

Table 6.1 Forms of conflict used by platform workers

	Crowdwork	Work-on-demand via apps
Organizing	online	offline
Action repertoire	cooperative	disruptive
Collective solidarities	ephemeral	enduring

Conversely, the food-delivery couriers' alliance with political activists pushed them to seek to involve other workers and speak on behalf of the current generation of precarious platform workers. In this sense, the support of social centres and political activists has helped couriers to politicize and 'universalize' their working conditions (see [Table 6.1](#)).

Class formation processes in times of digital work

Social and economic inequalities have been steadily rising across the world and across societies since the advent of neoliberal capitalism ([Piketty, 2013](#)); however, it is only recently that these processes have been again systematically investigated as specific sources of class division and polarization ([Pianta and Franzini, 2016](#)). The concomitant, and somehow connected, process of digitalization seems to have represented yet another trigger of fragmentation. As also shown in the volume, the rise of digital work has, in fact, spurred further dynamics of polarization in terms of specific requests for technical skills and know-hows among this new workforce, potentially leading to more complex forms of social division and, in turn, to new political cleavages. What all these processes seem to point to is the re-emergence of a traditionally relevant concept in sociological research: class (struggle). For long confined to the past, class and class formation processes have, in fact, returned to occupy a central stage in the current public and scholarly debate.

This volume addresses this debate by showing how the recent transformations in the world of work have affected the processes of the rise of workers' political consciousness. Against the (neoliberal) leitmotiv of the end of the class struggle ('we are all middle class'), we have argued instead that (new) labour and social conflicts are a central driver of capitalist societies. This seems all the more important today, as the digitalization of work results in new work identities, which may bring about unforeseen and unpredictable processes of collective politicization at the broader societal level. The remaining pages of this concluding chapter are devoted to these more speculative questions: is the rise and spread of digital work spurring class formation processes? What does class struggle in the world of digital work look like?

The image of a declining working class, which characterized the rise of neoliberalism in the 1980s and the 1990s, might have been based on a misleading generalization at the global level of a trend that was only relevant for core capitalist countries, as well as on a misinterpretation of short-term developments as long-term ones. Class struggle is once again becoming increasingly central, despite the weakening of some of the main components of the working class in previous periods. Increasingly, conflicts seem to involve poor workers and middle sectors of society that are caught between an increase in economic exploitation and the threat of social exclusion, which is the case for younger people in particular (Braga, 2020).

While class struggles have indeed never disappeared, they have certainly now adopted a new centrality and visibility. As Silver and Karataşlı have argued, ‘once we lengthen the time horizon of our analysis what looks like a terminal crisis of labor movements – the end of history – may turn out to be another lull between recurrent major labor movement upsurges’ (Silver and Karataşlı, 2016: 136). The importance of taking a long-term perspective had been in fact also stressed by Alessandro Pizzorno in his analysis of the working-class cycle of contention known as the Italian ‘hot autumn’. As he wrote, ‘it is high time that attention be paid to periodic variations in certain phenomena. Otherwise, at every new upstart of a wave of conflict we shall be induced to think that we are at the verge of a revolution; and when the downswing appears, we shall predict the end of class conflict’ (Pizzorno, 1978b: 293). Looking at cyclical rather than trend explanations, scholars have noted that ‘the conceptualization of strike history as a cyclical process is crucial to its understanding. Attempts to impose a linear concept of development on the long-term analysis of employment conflict, highlighting only the evolutionary and not the dynamic and repetitive elements in historical trends, are simply unrealistic’ (Shalev, 1978: 3).

Considering cyclical evolutions, what becomes important to address is then why labour conflicts increase in intensity and what are the implication of these moments of ‘resurgence of class struggle’ on broader issues of the formation of class. Looking at the evolution of capitalism, the analysis of the neoliberal financial crisis in the Great Recession brought about a revisit of Karl Polanyi’s double movement, which singles out a shift, in capitalist development, between social protection and the free market, through the action of movements and counter-movements. In his *The Great Transformation* (Polanyi, 1957 [1944]) addresses the first liberalism, many parallels emerged, however, between that and the new transformation in a free-market direction that took place, in a different continent, in the 1980s and onwards. Relevant for the analysis of social movements is Polanyi’s warning against the commodification of labour, land, and money that, if unchecked, would destroy society. As Burawoy (2015), among others, recalled, Polanyi had in fact pointed at the consequences of commodification as producing main

tensions within capitalist developments. Resonant with the aforementioned analysis on programmed society, commodification of knowledge has been recently added as a fictitious commodity – that is, a factor of production that is most important in to the production of the other three factors (Burawoy, 2015). In this sense, the commodification of knowledge emerges as particularly problematic for the long-term development of capitalism.

Polanyi's analysis focuses on specific forms that the countermovement, as the mobilization of those who feel betrayed by changes like those produced in neoliberalism, can be expected to take. Considering counter-movements as a reactive move, he points in fact at the ways in which these mobilizations develop as defensive and backward-looking. In this perspective, he looks at the first wave of liberalism during which protections for the poor, what Edward P. Thompson (1971) calls 'the moral economy of bread', were taken away, and this produced a rebellion not only against poverty but also against a betrayal of their rights. Counter-movements are indeed expected to resist an ideology of the dominance of the market over the social, which is pushed to the extreme. Building upon Polanyi, Burawoy singled out a sequence of three successive counter-movements: respectively, for labour rights, for social rights, for human rights. (Burawoy, 2015).

Polanyi's approach has been criticized as relying too much on the ideological pressure of the free-market doctrine, seeing countermovement as a rather spontaneous reaction. Also looking at medium-term transformations, David Harvey (2003) pointed instead at the capitalist logic of development and crisis, singling out different forms of accumulation, as respectively oriented to production and to dispossession – the latter reminding us of the original accumulation of capital on its need to expand through special relations with non-capitalist social formations. The periodic return to accumulation by dispossession points at 'the continuous role and persistence of the predatory practices of "primitive" or "original" accumulation within the long historical geography of capital accumulation' (Harvey, 2003: 144). Accumulation by dispossession and its discontents are linked indeed to the cyclical emergence of profit-making through financial speculation as an alternative to profit-making through production in order to address the problems of over-accumulation. In fact, access to cheap input (in terms of land, labour, and raw materials) is considered as relevant, as the widening of markets, in creating profits (Harvey, 2003: 145). To these, Harvey adds the predation related to the credit system and financial capital, as through accumulation by dispossession, various assets are released at very low cost (Harvey, 2003: 149). As privatization emerges as a main way of enclosing the commons, and liberalization and deregulation favours the growth of financial capitalism at the cost of production, crises and austerity programmes can be seen as instrumental to this cost-reduction and movements as influenced by them.

While these reflections point at important capitalist transformation as structural bases for class struggles, how large collectivities constitute themselves remains an open question (Barker, 2013). As research on labour activism cited earlier has pointed at, crises can indeed be addressed through the creation of resources of solidarity during protests. The long strikes or the factory occupations, as the camping in the squares or the pickets of the unemployed, that characterized the anti-austerity protests, should indeed be analyzed as a reaction to the crisis that then creates innovative ideas and practices (della Porta, 2015). Gramsci's 'organic crises', as crises of hegemony of the ruling class, tend indeed to fuel local militancy that can then converge in campaigns and movement projects (Cox and Nilson, 2013).

Looking at these processes also implies moving away from an analysis (albeit sophisticated) of classes as statistical aggregates to a consideration of classes as actors. While much research on social stratification seems to have forgotten the complexity of class conceptualization, looking mainly at statistical aggregates, the work of Alessandro Pizzorno helps to refocus attention on the ways in which class solidarity emerges during workers' struggles. In this sense, it speaks to recent reflections on a return not only of labour action but also of classes as a driver of history. As Mike Savage (2021: vi–vii) noted, in fact,

Within the heroic pedigree of socialist politics and Marxist analysis, social class was assigned a preeminent role, not simply as a technical measurement tool but in shaping the course of history itself. ... Class is clearly not some old, industrial relic ... but is alive and kicking, generating anger and resentment, and symptomatic of a host of dystopian problems.

In this sense, combining attention to structural and cultural dimension, class in itself and class for itself, we have looked in this volume at the specific forms of conflicts triggered by the emergence of social groups struggling for recognition. In fact, as was the case in the 1960s, the emergence of new categories of workers who are excluded from the existing circuits of representation brings about the type of struggles for recognition conceptualized by Pizzorno (1978a), in which for conflicts to occur, processes of group identification among workers need to develop during the daily interaction among workers, which are characterized by innovative forms of action and organizational models as well as an emergence of solidarity. Therefore, it can be said that cycles of protest bring about innovations in the contentious repertoires, networking, and identities of workers, with labour struggles increasingly taking the form of social movements.

In Pizzorno's analysis of the rise of the industrial working class, the reciprocal recognition among the workforce is both a precondition for a

common engagement aimed at being recognized by the employers, and an outcome of collective mobilization. A struggle for collective recognition therefore has to be considered as both a demonstration of and a catalyst for a process of identity formation, leading to a sense of commonality and shared interests. Notwithstanding the new technological conditions intersecting online and offline experience, Pizzorno's analysis is still relevant to investigate the production of solidarity and the new forms of recognition among workers dispersed in the contemporary digital platform works.

In the emerging gig economy of digital platforms, as in the case of food-delivery, community and associational resources at the city level are a key factor in overcoming situations of low institutional power. By exploiting the new opportunities of 'connectivity' given by the new digital tools, workers are available to renew what Rick Fantasia (1988) defined *cultures of solidarity*, as collective action creates new solidary social relations, by transforming workers' everyday experiences, disrupting old routines, and fostering the development of new ones – in the workplace, but also beyond it in the broader community. During collective action, workers experience different ways of interacting with colleagues, of coordinating the action of picketing, marching, or occupying that trigger a common sense of unseen reciprocity and solidarity. Cultures of solidarity are thus to be considered social constructs that come into existence during the course of workers' struggles. In our analysis, we have looked at how different forms of mobilization among groups of workers have impacted on their own definition of solidarity in the new contexts of digital platforms. In this regard, under some specific conditions, workers are able to reshape a digital environment that fosters fragmentation and individualization through their same digital tools, by creating autonomous forms of communication and connectivity that not only allow for the exchange of critical information, the elaboration of common claims, and the development of new repertoires of digital contention, but also the reshaping of a new collective identity and recognition.

In this sense, the revitalization of unions implies a return to social movement dynamics similar to those described in earlier historical moments (Turner et al, 2001; Voss and Sherman, 2001). This entails that labour is broadening its alliances with various actors involved in the struggle for social justice, as has been shown in many cases of social movement unionism during previous neoliberal transformations, both in core capitalist countries and in the semi-peripheries. In the Global South, unions added to 'the lay trinity (liberty, equality, fraternity) the values of diversity, peace and ecological care' (Waterman, 1998: 2), acting in alliance with other progressive movements, while in the US unions have joined in living wage, environmental, anti-sweatshop, and anti-globalization coalitions with a broad range of partners, drawn from faith, community, student, and environmental groups (Freege and Kelly, 2004). In Europe, alternative, rank-and-file unions have emerged

at different stages, and in response to new waves of neoliberal deregulation of the labour market, new mobilizations have emerged, aimed at building alliances among the categories of workers that constitute a 'new precariat' (Standing, 2011; della Porta, 2015), and a variety of actors characterized by a constant condition of social insecurity like migrants, young people, and the new working poor.

This emerging contention in digital platforms seems to confirm that, as had already been noted during previous cycles of technological innovation, the Internet is increasingly becoming a key tool for protesters in the labour conflicts. However, in times of increased connectivity, the online dimension is still closely linked to existing social structures in life offline (Castells, 2015). The new online sphere, therefore, creates new identities that hybridize with identities linked to the 'offline' spheres. In this sense, analyses that try to identify a new social stratification of 'online' workers, involved in digital activities and relations, point at the way in which online subjects are still embedded in a broader offline environment, and that digital socio-economic cleavages overlap with those offline. Attempts to find new subjects, such as the 'cybertariat' (Huws, 2013), the 'info-proletariat' (Antunes, 2012), or new cleavages within a 'virtual class' (Casilli, 2020), must deal with this complication, as the recent wave of mobilizations in platform capitalism have also shown how collective identities cannot only be defined through formal classifications, otherwise described as 'class on paper' (Bourdieu, 1987), but they have to be detected through the lived experiences and real practices performed by social groups. In this case, the social and political dimension of processes of workers' organizing is a key site from which to investigate the new lines of divisions among workers' identity as well as the new forms of collective identity building at the intersection between offline and online spaces.

Conclusions

Our research points at the capacity for labour movement revitalization in specific sectors of the new platform economy, in which various categories of workers have mobilized by adopting innovative action repertoires and organizational forms, at the intersection of the online and offline domain. Through and during their mobilization, these workers have also established solidarity relationships and networks which have led to original dynamics of collective identity formation. This resurgence of workplace conflicts has challenged the classical thesis of an inescapable trend in which strikes will 'wither away', pointing instead to variations in time, related to the emergence of new social groups, forms of struggle, and class consciousness. In their attempts to offer a systematic picture of the rise and development of workplace conflicts, IR scholars have theorized the presence of two

distinct and alternative hypotheses: the substitution ('balloon') and complementarity ('iceberg') hypotheses (Gall and Hebdon, 2008). On the one hand, the substitution hypothesis predicts that the formal structures that facilitate the expression of worker voice will reduce the existence of covert or disorganized forms of conflict. For instance, the presence of unions, high levels of workforce unionization, or worker representatives in the workplace are expected to induce the formation of an institutional channel of worker voice, which will tend to marginalize other more informal (or radical) forms of voice. Conversely, the manifestation of bottom-up and informal forms of conflict is both a presupposition and outcome of a lack of institutional channels of worker voice. In other words, the substitution hypothesis suggests that a reduction in one form of conflict expression is likely to lead to a corresponding increase in other manifestations of workplace conflict.

On the other hand, the complementarity hypothesis predicts that formally enabling the worker voice is connected to the corresponding growth in other forms of (submerged) conflict. Once an increase in any form of conflict expression occurs, this induces corresponding increases in other forms of workplace conflict. As a result, the complementary, or 'iceberg', thesis foresees that the presence of a specific form of workplace conflict may be a good symptom for the presence and proliferation of other forms of worker voice (Hebdon and Noh, 2013). From this angle, the actions of trade unions and social movements can be seen as distinct but parallel patterns of conflict that workers may be able to simultaneously express in the same wave of labour mobilization. The Hot Autumn of the Italian 1970s can be considered as a case in point for this type of thesis.

Although our findings on the new mobilizations in platform work cannot either confirm or dispute either of the two hypotheses, the very existence of this revival of protest against labour conditions challenges the idea of a decline in labour conflicts in contemporary IR. Rank-and-file organizations, social movements, and groups of political activists have, indeed, played a key role in the revitalization of the labour conflict in the platform economy. Although traditional unions have not been completely absent or marginal, they have been forced to emulate these organizations and adopt their more disruptive and innovative tactics of action.

In Western countries, the rise of platformization must be read as part of a broader general process of neoliberalization of employment relations that has been identified in the last decades (Baccaro and Howell, 2017). The implications of digital innovation on work and worker organizations, therefore, differ depending on a variety of factors that affect worker power. In this sense, the relationship between old and new types of unionism also needs to be explored in their specific context. If digitalization in a context of rising inequalities has thus magnified aspects of precarization

that had been taking place in Western countries for decades, it also forces unions and NSMs to build new coalitions in order to overcome an overly economic focus and instead become a political and social force (Tapia and Alberti, 2019).

The processes of union revitalization that are taking place in this new wave of digitalization are still subject to change, depending on a variety of factors linked to the 'locality': conditions of the workforce, its resources, and the opportunity structure in a specific area. Thus, the nature of social movement unionism can be linked to forms of a broader political process of democratization as in the Global South (Waterman, 1993; Nowak, 2019), or as a process of resistance to the rise of neoliberalism in the core capitalist countries (Moody, 1997) as well as to its crisis (Grote and Wagemann, 2018).

The pervasiveness of digital connectivity emphasizes the tendency of social structures to be more porous, with the precarity of labour increasingly becoming a broader societal issue that goes beyond the pure economic claims, to embrace broader democratic and political issues (della Porta and Mosca, 2005). This can also be seen in the recent mobilizations of platform workers that are deeply based on community resources and broader social networks of activism, thus suggesting a reconsideration of the commonalities between old and new types of social movements (Diani, 2018).

New forms of solidarity are quickly expanding, bringing consumers and workers together, as seen in the case of the Californian protest at Apple in solidarity with Chinese factory workers at Foxconn (Chan et al, 2020). There is also solidarity between workers at different positions of the value chain, with new phenomena like Tech Workers Coalitions,¹ which are characterized by international and inter-sectoral solidarity, aimed at building coalitions between knowledge tech-workers developing new technologies at the head of the value chains and manual workers in warehouses and logistics directly experiencing the consequences of new forms of technological control. At the same time, all of these tendencies have been exacerbated by the pandemic crisis, with a massive expansion in e-commerce services due to the virus containment measures that have undoubtedly cemented the centrality of key high-tech multinational players, such as Amazon and Facebook.² These trends at the structural level have radicalized latent grievances in key sectors like logistics, which became all the more relevant in the pandemic crisis, and triggered new dynamics of mobilization.

The critical juncture of the COVID-19 crisis is, thus, accelerating a process of labour revitalization that was already in place in the cases analyzed here. The historical, first national strike at Amazon Italy on 22 March 2021,³ which involved the entire supply chain of the Seattle tech giant, is a further sign of a social recomposition beyond fragmentation that at same time symbolically triggers a process of generalization that suggests a revitalization of the labour

movements in times of digitalization, implying a growing centrality for labour control over dynamics of expansion of big-tech multinationals.

From the first strikes carried out at the Amazon warehouses near Piacenza on 27 October 2011, worker mobilizations have gradually increased the scale of generality of their claims and reached specific goals. The cycle of strikes in Lombardy saw Amazon drivers achieve mobilization at a regional level. In 2019 they were also successful in reaching an agreement that involved the entire supply chain, in which it was accepted that the national logistics contract would be applied to all workers, thus reducing their levels of precariousness and the fragmentation of the workforce caused by subcontracting. In a constantly evolving situation, where Amazon continues to open new warehouses, fulfilment centres, and stations throughout Italy, the various mobilizations of workers reached their peak with the first national strike of the entire supply chain on 22 March 2021, the first strike involving not only the entire supply chain, but also every category of worker, from stockers and pickers at the warehouses to drivers involved in last-mile urban deliveries. Although the rise of labour unrest at Amazon has been particularly significant in Italy, it is part of an international trend related to Western countries, especially the centre: the unionization process of Amazon workers in Alabama is undoubtedly a sign of an ongoing process which is most likely destined to change the nature of IR at the Seattle tech giant.

Of course, Amazon is not the only company to be affected by this process of labour revitalization. Indeed, since the outbreak of the COVID-19 pandemic, there has been a significant rise in e-commerce. Food-delivery platforms, which had already been experiencing a wave of contention at the international level, have also been the stage of labour mobilizations. The protest events carried out by food-delivery courier collectives have, in fact, escalated during the pandemic, and have managed to achieve a number of important goals. In March 2021, the Spanish government signed the first agreement to recognize the couriers as employed workers. In Italy, in February 2021, the court of Milan opened proceedings against the multinational platforms for '*digital caporalato*' and on 26 March Italian couriers, organized by the national network of '*riders per i diritti*' ('riders for rights') which involves both traditional unions and social movement organizations, proclaimed the first 'No Delivery Day' national strike. All of these events point to the growing importance of the process of digitalization, not only for the emergence of these new highly technological sectors, but also for the transformation of worker organizations, labour conflicts, and employment relations more generally. The advent of the digital era is, thus, far from being a quiet process diluted in the clouds of the web, but it is also, and above all, the political stage of new social conflicts that redefine the nature of work and technology and their centrality in society.

A new research agenda on the labour conflicts in the digital age should therefore address all of these challenges by merging social movement studies, IR literature, and critical political economy with the aim of promoting a transdisciplinary endeavour that has not been pursued or achieved thus far.

Appendix: List of Interviewees

Couriers

- IC1 Interview with food-delivery courier – Turin, 16 June 2018
- IC2 Interview with food-delivery courier – Milan, 5 July 2018
- IC3 Interview with food-delivery courier – Bologna, 17 September 2018
- IC4 Interview with food-delivery courier – Bologna, 18 September 2018
- IC5 Interview with food-delivery courier – Bologna, 18 September 2018
- IC6 Interview with food-delivery courier – Bologna, 18 September 2018
- IC7 Interview with food-delivery courier – Milan, 6 July 2018
- IC8 Interview with food-delivery courier – Turin, 16 June 2018
- IC9 Interview with food-delivery courier – Milan, 6 July 2018
- FN1 Field notes from participant observation at the national couriers' assembly – Bologna, 15 April 2018

Drivers

- ID1 Interview with Regional Secretary – FILT-CGIL Lombardia, Milan, 13 March 2019
- ID2 Interview with Amazon driver – Milan, 18 March 2019
- ID3 Interview with Amazon driver – Milan, 18, March 2019
- ID4 Interview with Amazon driver – Milan, 18 March 2019
- ID5 Interview with Amazon driver – Milan, 18 March 2019
- FN1 Field notes from participant observation at the Worker Assembly Buccinasco, Milan, 10 April 2019
- FN2 Field notes from participant observation at the Worker Assembly Toffetti – Milan, 9 April 2019
- FN3 Field notes from participant observation at the Worker Assembly Via Lombroso – Milan, 15 April 2019

Notes

Chapter 1

- ¹ Processes of self-organization are more common in the Global South, and the collective association and representation of workers is more diverse from the outset than in the Global North, so the interplay between established trade unions and other types of collectivism is often more complex (see [Basualdo et al, 2021](#)).

Chapter 3

- ¹ For these authors, the dominant capital accumulation model of contemporary corporate Internet platforms is based on the exploitation of the unpaid labour of users, who engage in the creation of content and in the use of blogs, social networking sites, wikies, micro-blogs, content sharing sites for enjoyment. In their view, these activities produce various forms of economic value, which are at the heart of profit generation in the platform economy (see, for instance, [Casilli, 2020](#)).
- ² For a valuable exception, see [Scholz \(2016\)](#), who is the founder of the theory and movement of ‘platform cooperativism’. In his view, it is possible to alter the original, for-profit purpose of mainstream corporate platforms in order to create alternative, non-profit, and democratic networks, namely, what he calls cooperative platforms.
- ³ While [Wood and Lehdonvirta \(2021\)](#) only identify these three forms of dependency for high-skilled platform workers, such as online teachers, informaticians, engineers, and so on, we suggest that low-skilled workers, such as Amazon Mechanical Turk workers or food-delivery couriers, also exhibit all three forms of dependency with their own platforms. If we look, for example, at Amazon Mechanical Turk, we can note that it provides their ‘micro’ workers with an online platform which is the only (virtual) space where they meet their clients (network effect) and they gain their online reputation which allows them to choose the best clients (data lock in). However, outside of said platform ‘Turkers’ do not exist and, therefore, cannot find new clients or comply with their tasks (no work outside the platform). Similar relations of dependence can also be envisaged for food-delivery couriers.
- ⁴ This intuition regarding the potential relationship between the intensification of vertical control and the individuation of a target for labour conflict has been developed by [Roland Erne \(2017\)](#), who has explored the processes of transnationalization of labour struggles in contemporary Europe.
- ⁵ For [Lei \(2021\)](#), this contestation becomes possible because the platform companies, by focusing on the management of the platform system rather than that of couriers ‘further renders free spaces available ... to turn moments of escalation into moments of collective action and solidarity’ ([Lei, 2021: 304](#)).

- ⁶ We consider in the category of on-demand workers also those sectors of last-mile urban logistics that have been disrupted by the expansion of platformization and e-commerce. These changes have produced controversies regarding their legal and contractual regulation, which are part of the claims that have emerged in the new worker mobilizations. In many cases, the conditions of many traditional sectors of delivery services are common to on-demand workers working for platforms. These are, specifically: 1) the flexibility required of the workforce by the companies to adjust to the volatility of the flows of e-commerce – especially during periodical peaks of delivery due to seasonal sales or Black Fridays; and 2) the new algorithmic technologies introduced to control pace of work and volume of delivery.
- ⁷ Drawing on Beverly Silver's distinction (2003) between marketplace bargaining power and workplace bargaining power, we contend that job skills and competencies are relevant mostly for workers' marketplace power and very marginally for their workplace power. More importantly, high-skilled workers tend to use their marketplace power to bargain with their employers or in an attempt to improve their working conditions rather than their (normally) marginal workplace power. As the aim of the chapter, and of this book more generally, is to explore and make sense of the dynamics of digital worker mobilizations and their power at the workplace level, we have dropped this distinction and combine high-skilled and low-skilled workers in the same category, both for crowdwork and on-demand work via apps. As a result, we will only refer to the distinction between crowdworkers and on-demand workers when illustrating their mobilizations in the text. As it happens, most of these workers' mobilizations concern low- or medium-skilled jobs.

Chapter 4

- ¹ More articulated typologies of platform worker representation have been proposed recently. Basualdo et al (2021) have, for instance, identified three patterns of platform workers' organization vis-à-vis established trade unions: 1) autonomous; 2) alliance-building; 3) integration. Focusing on trade-unionism, it is, however, of limited use to grasp the dynamics of worker mobilization we investigate.
- ² Besides such union-centric bias (Atzeni, 2016), the other flaw of mainstream IR literature is its scant focus on platform workers. The most systematic studies on platform workers thus far in such literature are two working papers: one by Vandaele, *Will Trade Unions Survive in the Platform Economy?* (2018), the other by Basualdo et al, *Building Workers' Power in Digital Capitalism: Old and New Labour Struggles* (2021). As the rise of the platform economy is a relatively recent phenomenon, this limited scholarly attention is to a certain extent to be expected. What this review will address is a proximate subfield that can be useful for understanding the forms of organizing adopted by digital workers, namely, the IR scholarship on non-standard workers.

Chapter 6

- ¹ <https://techworkerscoalition.org/>
- ² www.forbes.com/sites/jonathanponciano/2020/05/22/billionaires-zuckerberg-bezos/?fbclid=IwAR3MqEtQqHcEHVUKxtDnm8oM-FQkCbEkudvx7Rsg_PWqRxxd0tyt-mi6Pdc&sh=1f94c4d77ed6
- ³ www.reuters.com/article/us-amazon-italy-strike-idUSKBN2BE1K2

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