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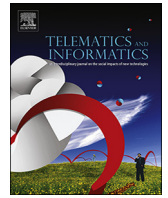
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Conceptualizing digital capital

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1. Introduction

This article makes a theoretical contribution by looking at the rise of digital capital and its relation to the already existent social, economic, personal, political and cultural capitals (the five capitals, 5Cs from now on). It specifically refers to the ways through which the interaction between the digital capital and the 5Cs generates inequalities in online experience (second level of digital divide), and how this new capital contributes towards the creation of the third level of digital divide, seen as the inequalities in the returning social benefits of using the Internet (van Deursen and Helsper, 2015; Ragnedda, 2017). This paper will attempt to explain how, in order to make profitable the resources gained from the digital realm and transform them into social resources, individuals need a positive interrelation between the digital capital and social (Bourdieu, 1983; Coleman, 1990; Putnam, 1995), political (Syed and Whiteley, 1997), economic (Bourdieu, 1983), personal (Becker, 1996) and cultural capitals (Bourdieu, 1983). This interaction helps individuals to transform the *digital* resources into *social* resources and to exploit the full advantages offered by the Internet.

This article fits in the lively debate, opened by the advent of new media, on inequalities in access (first level of digital divide), uses (second level of digital divide) and outcomes generated online and valuable in the social realm (third level of digital divide). The possibilities for an individual to access and use the Internet are at the base of the first level of digital divide (Newhagen and Bucy, 2005). While this perspective might be useful to provide an overview of the spread of digital technologies in a given society, it is a partial way to analyse the phenomenon of digital divide, because it is based merely on the gaps accessing to the Internet. The digital divide, despite its earlier simplification, is a multidimensional phenomenon related to complex issues that involve all aspects of community life, in economic, political, cultural and social arenas. The literature went beyond the simple yes/no measure of access, to investigate how previous social inequalities influence the rise and persistence of digital inequalities (Helsper and Eynon, 2013; Van Deursen and Van Dijk, 2014; Zillien and Hargittai, 2009). Since social and digital inequalities are strongly intertwined and tend to influence each other, digital inequalities need to be analysed in relation to the social, cultural, economic, political and personal context in which it is generated. The literature on digital divide has already highlighted how unequal access to economic, social, cultural, and personal resources affect engagement with ICTs (Helsper, 2012; Van Dijk, 2005) and determine inequalities in using them, thus influencing the first and the second level of digital divide. This paper will go beyond these two levels of digital divide by looking at the rise of digital capital and how its interaction with income and occupation (economic capital), education (cultural capital), ties and trust (social and personal capital), motivation and purpose of use (personal capital), and political engagement (social and political capital), affects also the third level of digital divide.

To shed light into this issue, this paper will first attempt to define digital capital, and the reasons why do we – as researchers of communication and its social and technological aspects – need to introduce a new capital in our theoretical toolkit. For the sake of clarity, it must be noted that digital capital is not a completely new concept. Tapscott et al., (2000) and Roberts and Townsend (2015), for instance, have used it in relation to the resources upon which the development of new services and products for the digital economy rely, while Seale, Ziebland, and Charteris-Black (2006), instead, have used it as framework to understand the relationship between learning support technologies and their use made by disabled students in higher education. However, what is missing in the literature is a theoretical discussion both on the digital capital as a new “bourdieusian capital”, as well as how it could affect the second and the third level of digital divide. Thus, this article will fill the gap in the literature by proposing a nuanced definition of

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digital capital and analysing how its relationship with the 5Cs influences digital inequalities, and how it may reinforce or mitigate previous social inequalities.

2. Defining digital capital

Do we really need to introduce a new capital in our theoretical toolkit? Are not the different kinds of capital already available in social sciences – *inter alia*, economic capital, social capital, ethnic capital, human capital, physical capital, cultural capital, personal capital, symbolic capital, political capital – enough to shed light into the role played by the Internet in our everyday life? And, more provocatively, was Hodgson not right when he wryly notes that “capital has now acquired the broad meaning of a stock or reserve of anything of social or economic significance. Everything has become capital” (Hodgson, 2014: 1075)?

Let us start with the last point. Hodgson (2014) thinks social scientists should consider returning to less glamorous but in his view much more useful terms such as “institutions”, “culture”, “networks”, “skills” or “trust”. While Hodgson’s criticism are somehow useful and interesting, he is wrong in confining the meaning of capital to money investible in production or to the money value of owned, alienable, collateralizable assets that are employed in production and thus rejecting such terms as “social capital”, “personal capital”, “political capital”. The concept of capital, indeed, transcends the economic aspect. The concept of capital is vital in social science and, using Bourdieu’s words, can be seen as “the set of actually usable resources and powers” (Bourdieu, 1984: 114) that play a vital role in producing and reproducing profits in individuals’ life opportunities (Bourdieu, 1983). For Bourdieu, as Ignatow and Robinson have underlined (2017: 952), “capital refers to stocks of internalized ability and aptitude as well as externalized resources which are scarce and socially valued. Like the more traditional form of capital, they can be transformed and productively reinvested”. Bourdieu, thus, went beyond Marx’s idea of capital, embracing the more symbolic realm of culture, and proposing a capital that may be social, cultural or symbolic. These forms of capital may be accumulated and converted into different forms of capital. These two key features – accumulation and transferability from one arena to another – characterize capital. Digital capital, as we shall see, encompass both features and for this reason might be intended as capital in bourdieusian way. Bourdieu’s (1983, 1984) capital-based approach has been used by several scholars (DiMaggio and Hargittai, 2001; Gilbert, 2010; Yardi, 2010) to rethink and reframe the digital divide. In this vein, this paper is building up on capital-based approaches to conceptualize digital capital.

But what, exactly, is digital capital and why an updated definition of informational capital is not the right concept to be used in this context? Digital capital is the accumulation of digital competencies (information, communication, safety, content-creation and problem-solving), and digital technology. As with all the other capitals, its continual transmission and accumulation tend to preserve social inequalities. In bourdieusian terms, we may define digital capital as “a set of internalized ability and aptitude” (digital competencies) as well as “externalized resources” (digital technology) that can be historically accumulated and transferred from one arena to another. The level of digital capital that person possesses influences the quality of the Internet experience (second level of the digital divide), which, in turn, may be “converted” into other forms of capital (economic, social, cultural, personal and political) in the social sphere, thus influencing the third level of digital divide.

Digital capital is, therefore, a bridge capital between online and offline life chances (Weber, 1949), that not only allows previous capitals to be efficiently exploited on the digital realm, but also fosters them, reproducing profits into the offline realm. The real benefits users get from the use of the Internet are based on their previous capitals plus their interactions with digital capital, both during and after the online experience. Digital capital transforms offline activities (shaped by the 5Cs) into digital activities (time spent online, information and knowledge found, resources and skills acquired and types of activities carried on, etc.) and, in turn, such online activities are converted into externally observable social resources (better job, better salary, bigger social network, better knowledge etc.). This new capital interacts with each single capital, and the fruits of this interaction have consequences both on the digital and on the social realm.

Digital capital differs from the definition of “informational capital” that Bourdieu introduced himself in his later works (Bourdieu and Wacquant, 1992). Bourdieu extrapolated it from the concept of cultural capital: “I have analysed the peculiarity of cultural capital, which we in fact call informational capital to give the notion its full generality, and which itself exists in three forms, embodied, objectified, or institutionalized” (Bourdieu and Wacquant, 1992: 119). Informational capital, often translated as knowledge capital, “is similar to the third dimension of informational capital; namely, institutionalized capital, which is typically understood as academic qualifications” (Munk, 2009: 5). Informational capital does not sound appropriate to new scenario opened up by the advent of new media. Neither the updated conceptualization of it against the reality of the Internet-based information society (Priour and Savage, 2013: 261–262) sounds useful in this context. Some interesting research, such as Hamelink (2000) and, above all, Van Dijk (2005), have theorized and operationalized the concept of informational capital in studies of digital inequalities. This concept is extremely useful in explaining and measuring inequality of skills and usage (second level of digital divide). However, in light of the recent research on the third level of digital divide, there is a need to measure and explain the social, economic, political, cultural and personal consequences of a different Internet usage (third level of digital divide). For these reasons, a new capital, both as theoretical and as empirical tools for social researchers interested in digital inequalities, is needed. The digital capital fits into this lack of appropriate theoretical and empirical tools to investigate the tangible outcomes – detectable by an external observer – of the use of the Internet.

3. Interaction between digital capital and 5Cs

The digital capital is deeply intertwined with previous capitals and relies on them to transfer into the social fabric the online experience, transforming it into social resources. Therefore, users’ previous five capitals and their interactions with digital capital are

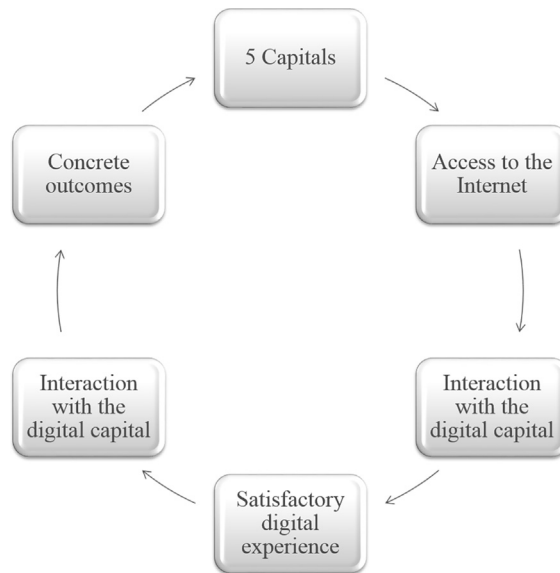


Fig. 1. The Intertwined relationship between Digital and 5Cs.

vital both in the digital inclusion/exclusion process, and also in determining inequalities in terms of using ICTs and transferring into the social realm the benefits generated online. Exclusion from or limited access to the digital realm, in which economic and socially relevant information circulates and some of the most important human and social activities occur, is one of the main source of social inequality. Evidently, class position, gender, ethnic/racial minority status, sexual orientation are still the main sources of social inequalities, but in a digitally enabled society being excluded from or having limited access to ICTs means not having the toolkit “necessary to participate and prosper in an information-based society” (Servon and Nelson, 2001: 279). A number of scholars highlighted that both limited access to and use of the Internet affect citizens’ existential opportunities (van Dijk, 2005), negatively influence the process of social inclusion (Warshauer, 2004), and thus contributing to offline disadvantages (Chen, 2013). However, the simple access and skills in using ICTs properly is a necessary but not sufficient condition to improve a person’s everyday life, and do not automatically generate factual outcomes valuable on the offline world. Without digital capital, users’ previous capitals cannot be converted into digital resources, thus losing their potentialities. At the same time, the interaction between digital capital and the 5Cs makes possible to transform the resources acquired online into social resources that could produce and reproduce profits in citizens’ life chances. Given the definition of digital capital, as a bridge capital between the offline and the online experiences, its interaction with the 5Cs allows citizens to first use these capitals online and then to reinvest their proceedings in the social realm, producing measurable individuals outcomes (e.g. welfare, income, health) (see Fig. 1).

To use the Internet in an effective way, citizens need to have already built up capital(s) in their offline life. Indeed, having particular skills and knowledge, precise motivation, specific family background, occupational memberships, and social status influence not only the access to (first level of digital divide), but also the Internet experience (second level of digital divide) and the capacities to reinvest in the social realm the fruit of this experience (third level of digital divide). For instance, those users who have an already strong economic capital can further increase their original capital through the use of ICTs and their digital capital, by transforming their digital experience into social resources that could improve their socio-economic status (e.g. exploiting their online activities to get a better job position or to improve their businesses). Similar mechanism could be applied for social (e.g. enlarging social network), personal (e.g. increasing self-confidence), political (e.g. improving civic engagement) and cultural capitals (e.g. boosting literacy and skills). Therefore, those who access the Internet with a high endowment of social capital, with personal motivations and proper cultural, political and economic background, will be more likely to reproduce their capitals online, applying mechanisms similar to those adopted offline. In turn, the capitals (enhanced online) will support users’ offline activities, through the interaction with digital capital.

3.1. Ideal types scenario

In this section, we propose four ideal types or hypothetical concepts as a general frame to evaluate this interaction (Weber, 1949). We may hypothesize that we have a “positive result” when both interacting capitals (e.g. digital and social capital or digital and economic capital) are high, or one of them is really high thus influencing positively the result of such interaction. By contrast, we can refer to a negative interaction when both are low or one of the two capitals is really low, thus influencing negatively the interaction. The result of the interaction between digital capital and any of the 5Cs, affects both the second (inequalities in what we do online) and third level of digital divide (inequalities what we get from the online experience) (see Fig. 2).

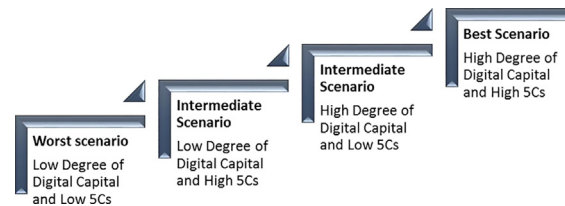


Fig. 2. The four Ideal types scenario.

- a) The first ideal type is “*the best scenario*”, namely the possession of strong 5Cs plus a high level of digital capital. This would imply not only a better and more satisfying experience of using the Internet (second level of digital divide), but above all the capacity to transform this satisfactory digital experience into something concrete and valuable in the offline world (third digital divide). In this case, the already socially advantaged individual will further reinforce their privileges. An extreme example could be Mr. Trump who approached and used the Internet with a really high level of social, political, economic, personal and cultural capitals. During the American political campaign (2016), he has demonstrated a high level of digital capital (much more than simple digital skills) transforming his digital experience into something concrete in the offline world. The interaction of a high level of 5Cs and high level of digital capital has produced positive effects in all five capitals, further reinforcing his socially advantaged positions.
- b) By contrast, *the worst scenario* is represented by an individual with low level of five capitals (e.g. an individual with a low income, not well educated, with low levels of social ties and trust, poor motivation and poor political and civic engagement) and low level of digital capital. In this case, the already social-economic disadvantaged position will be further reinforced, since he or she is fully or partly excluded from both the social and digital realm. Indeed, a total or partial exclusion from the digital realm have consequences in a wide array of outcomes in social life, such as, for instance, health and wealth services (Muncer et al., 2000; Nettleton et al., 2002), access to the job market (Van Dijk, 2005; DiMaggio and Bonikowski, 2008; Reynolds and Strykowski, 2014), leisure (Ragnedda and Mutsvauro, 2016), and academic and educational performances (Galuszka, 2007).
- c) High levels of all 5Cs does not necessarily generate digital capital. In fact, *a third ideal type scenario* might be represented by an individual with low level of digital capital and high level of 5Cs. This could be the case of citizens with high level of education, strong socio economic position, high level of social and political capital, but that are not interested or capable (lack of skills/time/digital literacy/motivations and purposes to join the online realm) of using the Internet to improve their life chances. In this scenario, their relevant social position may not been further reinforced or even could deteriorate the social position. It might be the case of an old and retired professor (strong cultural capital) active both in the social and political life (strong social and political capital) and with a good economic position (high economic capital), but not able/capable/interested in using ICTs to improve their life chances (low level of digital capital). In this hypothetical scenario, they will not further enhance their previous (already high) capitals.
- d) Finally, *the ‘ideal type’ combination of people with low levels of 5c and high digital capital*. An example might be a smart criminal with low social class, low level of social capital, poor educated and not involved in any political and civic activities, mastering digital tools in practice (for criminal online communication and cybercrime). In this scenario, the individual may use their digital capital to enhance their digital experience and transform it into other capitals, such as economic capital.

Evidently, several different degrees exist between these ideal types, in relation to how each single capital is combined with digital capital. The following discussion, based on the above mentioned approaches to the relations between digital capital and the 5Cs, far to be exhaustive, gives some potential fruits of such interactions. The aim is, then, to focus on the interaction of digital capital with each single capital and see how it effects, both positively and negatively, the second and the third level of digital divide. Again, it is worth reminding that the following are constructed abstracts or hypothetical concepts (ideal types) that serve as a general frame for interpretation (Adams and Sydnie, 2001).

The following examples aims to be the starting point of a theoretical model that other researchers can use in their empirical research. The problem of convertibility of capitals and social rootedness of digital skills and uses was the subject of theoretically-based empirical studies by Jung et al. (2001), Thiessen & Dianne Looker (2007), Lopez-Sintas et al. (2012), Skjøtt-Larsen (2012), and Drabowicz (2017). These research proved that it is possible to operationalize the capitals and their convertibility, in the digital inequalities studies. However, what is missing in the literature is the attempt to theoretically frame the digital capital and its interaction with the 5Cs. At this stage, with the goal to give an indicative overview of the interaction between each capital and digital capital, and following the ideal types model proposed above, we can hypothesize a short and indicative list of positive and negative results of this interaction, both in terms of second and third level of digital divide. The below list might offer some insight to identify some variables that might be isolated and empirically tested to measure both the level of digital capital and the externally observable outcomes of the interaction with other capitals.

3.2. Social capital and digital capital

Several studies have focussed on how social capital may affect digital divides (Chen, 2013; Rogers, 2003; DiMaggio and Cohen, 2003), analysing how the digital divide may increase inequalities in terms of possession of social capital (Pénard and Poussing, 2010;

Katz and Rice, 2002). However, what is missing is a theoretical discussion over the consequences – specifically for the third level of digital divide – of the interaction between social and digital capital.

Social capital has been defined in many different ways. Coleman (1990) defines it as the product of relationships, differentiated from human and physical capital; Putnam (1995, 2001) refers to a multidimensional capital, which consists of values, trust, reciprocity, and civic engagement. The concept of social capital here adopted derives from Bourdieu (1983: 249) who defines social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition”. Thus, this article is referring to social capital as a distinct form of capital in contrast to economic, cultural, and symbolic capital, which is built up based on present and potential resources resulting from relationships. One of the difficulties in using Bourdieu’s social capital theory is that he did not describe how it should be operationalized. However, amongst the others, Ziersch (2005), Carpiano (2006) and Song (2011) have attempted to measure social capital.

We can hypothesize that if the result of this interaction is negative (because both capitals are low or one of the two is really low) the consequences, in terms of second level of digital divide, might be, amongst the others: a) limited capacities to reinforce virtual social ties; b) limited capacities to participate in informal or formal social networks; and c) limited capacities to link different kinds of virtual social network. By contrast, when the result of this interaction is somehow positive, the effects in terms of second level of digital divide might be seen in the a) capacities to reinforce virtual social ties; b) capacities to participate in informal or formal social networks; and c) capacities to link different kinds of virtual social network. Several digital inequalities researchers have operationalized the concept of social capital. For instance, Hofer and Aubert (2013), Lewis et al. (2008) and Brooks et al. (2014) have used data available on social media platforms to focus on digital dimensions of social capital. However, once again, what is missing is the attempt to analyse the tangible outcomes of the interaction between social and digital capital. Hence, we can suggest that if the interaction between these two capitals is negative, the results are visible in the incapacity to transform digital resources into concrete outcomes. More specifically, the fruits might be visible in terms of a) limited capacities to transfer acquired virtual social capital into the offline realm; b) limited capacity to connect online and offline social networks; and finally c) limited capacity to implement virtual activism effectively also in the offline realm. By contrast, a positive interrelation means: a) high capacities to transfer acquired virtual social capital into the offline realm, b) high capacity to connect online and offline social networks and c) high capacity to implement virtual activism effectively also in the offline realm. These concrete outcomes deriving from the interaction between social and digital capital improve citizens’ life chances (Table 1).

3.3. Political capital and digital capital

Although participation in political organizations was part of the classification of social capital proposed by Putnam (1995), here is intended as a separate domain. Indeed, according to Sørensen and Torfing (2007: 610) “while social capital refers to trust-building through social interaction in civil society, political capital refers to the individual powers to act politically that are generated through participation in interactive political processes”. Here, we are interested in analysing how the interaction between digital and political capital may enhance the individual powers to act politically, boosting the political capital and thus improving their life chances.

In terms of different uses of the Internet (second level of digital divide), a negative result of the relation between these two capitals result in limited capacities: a) to determine and influence political agendas online, b) to promote and protect the interests of the status group, or c) to use ICTs to organize online political protests. By contrast, a positive relation means, among the others: a) having high capacities to determine and influence political agendas online (both during and after electoral campaigns); b) promoting and protecting the interests of the status group and c) using ICTs to propose online political protests (both on a local and global scale). Several research have already underlined how an effective use of the Internet, might motivates civic and political participation (Prior, 2001; Shah, Kwak, and Holbert, 2001; Shah et al., 2001; Tolbert & McNeal, 2003; Weber et al., 2003). However, what is missing is an attempt to investigate how the relation between digital and political capital might concretely enhance the political capital and produce tangible outcomes in this field. We can, then, hypothesize that when the result of such interaction is negative, among the

Table 1
Interaction between Social and Digital Capital.

Interaction	Second Digital Divide	Third Digital Divide
Positive	High capacities to reinforce virtual social ties	High capacities to transfer acquired virtual social capital into the offline realm
	High capacities to participate in informal or formal social networks	High capacity to connect online and offline social networks
	High capacities to link different kinds of virtual social network.	High capacity to implement virtual activism effectively also in the offline realm.
Negative	Limited capacities to reinforce virtual social ties	Limited capacities to transfer acquired virtual social capital into the offline realm
	Limited capacities to participate in informal or formal social networks	Limited capacity to connect online and offline social networks
	Limited capacities to link different kinds of virtual social network.	Limited capacity to implement virtual activism effectively also in the offline realm.

Table 2
Interaction between Political and Digital Capital.

Interaction	Second Digital Divide	Third Digital Divide
Positive	High capacities to determine and influence political agendas online. High capacities to promote and protect the interests of the status group. High capacities to use ICTs to organize online political protests.	Several chances to enhance one's political capital through the information gathered online. High capacities to enhance one's political position within society; and finally. High capacities to use ICTs to increase one's influence in policy-setting and enhance one's credibility and reliability in the offline world.
Negative	Limited capacities to determine and influence political agendas online. Limited capacities to promote and protect the interests of the status group. Limited capacities to use ICTs to organize or propose online political protests.	Lack of chances to enhance one's political capital through the information gathered online. Limited capacities to enhance one's political position within society; and finally. Lack of capacities to use ICTs to increase one's influence in policy-setting and enhance one's credibility and reliability in the offline world.

consequences we can notice: a) a lack of chances to enhance one's political capital through the information gathered online; b) limited capacities to enhance one's political position within society; and finally c) a lack of capacities to use ICTs to increase one's influence in policy-setting and enhance one's credibility and reliability in the offline world. On the other hand, a positive result means better chances to improve life chances, as a result of an enhanced political individual power to act politically through participation in interactive political processes or being member of some advocacy group. For instance, as a result of this positive interaction between digital and political capital, we may look at the capacities, through the use of ICTs, to improve the political visibility and to foster the individual power to act politically, enhancing one's credibility and reliability and subsequently fostering one's political position within society (see [Table 2](#)).

3.4. Economic capital and digital capital

Economic capital may be displayed in wealth and family income. In bourdieusian words it refers to material assets that are 'immediately and directly convertible into money and may be institutionalized in the form of property rights' ([Bourdieu, 1983: 242](#)). It encompasses all kinds of material resources that could be used to obtain or preserve better life chances. Amongst the others, the research carried out by [van Deursen and Helsper \(2015\)](#) have shown how more socioeconomically advantaged citizens gain greater tangible benefits from a qualitatively different use of the Internet. This means that those who are already socio-economically advantaged not only use the Internet differently than less advantaged counterparts, but they also get the most from its usage, further reinforcing already existing social inequalities. Again, using the same model applied above, a negative result from the interaction between economic and digital capital is evident in terms of: a) a lack of capacities to engage in digital job-seeking behaviours; b) limited opportunities to use the Internet for capital-enhancing activities; and c) reduced possibilities to implement cost-effective management strategies in daily life. By the opposite, a positive relation might result in a qualitatively different online experience in terms of capital-enhancing activities, job seeking attitude (searching job listings online, creating a professional CV, using social media for job-searching activities, following up correspondence via email with potential employers, and so on) and implement cost-effective management.

Finally, the interaction between digital capital and economic capital is visible in terms of social benefits deriving from the use of the Internet. If the result of this interaction is negative, results are observed as: a) a lack of opportunities to "reinvest" valuable information gathered online in the social realm. Even a high degree of digital literacy and capacities to find out valuable information might not produce constant tangible outcomes, as individuals have different opportunities/capacities/abilities to "transfer" such valuable information into the social realm. Secondly, if the result of this interaction is negative it might mean b) limited capacities to improve one's class position using digital valuable resources and, thirdly, c) a lack of opportunities to reinvest earnings gained online (valuable information and online resources) to enhance the social fabric. When the result is positive, then it indicates a capacity to exploit and reinvest online resources to enhance the social fabric, and improving class position by reinvesting digital resources into the social realm (see [Table 3](#)).

3.5. Personal capital and digital capital

Personal capital is the stock of all past personal experiences that affect individual's present and future preferences, and it makes engagement in particular activities more worthwhile for them ([Becker, 1996: 4–6](#)). Lack of interest or lack of stimuli, both in acquiring new technologies to be involved in the digital arena, or skills to navigate the web, create a form of self-exclusion from the digital realm that is at the base of the first level of digital divide. Furthermore, degree of e-inclusion and types of Internet activity are shaped not only by the skills possessed by the users, but also by the interest (or lack of it) in using digital technologies and by individuals' position in the social structure. Motivation and *stimuli* are often given by the cultural norms and values, as Bourdieu explained with his concept of *habitus* ([1985](#)), in which the individual is embedded through the experiences of daily life. In Bourdieu's work, indeed, it is the *habitus*, intended as common schemes of perception, conception and action ([Bourdieu, 1985](#)) that are acquired

Table 3
“Interaction between Digital capital and Economic Capital”

Interaction	Second Digital Divide	Third Digital Divide
Positive	High level of capacities to engage in digital job-seeking behaviours Several opportunities to use the Internet for capital-enhancing activities; High capacities to implement cost-effective management strategies in daily life.	Opportunities to “reinvest” valuable information gathered online in the social realm. High capacities to improve one’s class position using digital valuable resources Opportunities to reinvest earnings gained online to enhance the social fabric
Negative	Lack of capacities to engage in digital job-seeking behaviours Limited opportunities to use the Internet for capital-enhancing activities; Reduced possibilities to implement cost-effective management strategies in daily life.	Lack of opportunities to “reinvest” valuable information gathered online in the social realm. Limited capacities to improve one’s class position using digital valuable resources A lack of opportunities to reinvest earnings gained online to enhance the social fabric

in daily life through social interactions (Ignatow and Robinson, 2017: 954), that is responsible both for the convertibility of different forms of capital and for social reproduction of inequalities. However, having physical access to the Internet does not automatically mean to be digitally included (access is only the first step in the digital inclusion process) or being able to improve one’s personal capital. Again, by applying the ideal types model, we can suggest that if the result of the interaction between digital and personal capital is low, the negative effects are visible both in terms of digital experience and in terms of real outcomes. In terms of the second level of digital divide a negative interaction between digital and personal capital, results, among the others effects, in: a) limited capacities in using ICTs; b) lack of abilities and confidence in using ICTs; and c) a negative perception and lack of interest in using ICTs. By contrast, when the result of such interaction is somehow high or positive, we can note a better level of digital inclusion, based on better capacities in using ICTs, higher confidence in using ICTs and a positive perception and a high awareness about the potential personal benefits of ICTs. However, as we have seen above, this better digital experience, do not necessarily transform digital resources into concrete outcomes in the social sphere. Indeed, if the consequences of the interaction between personal and digital capital is negative, then the results are visible in terms of a) lack of capacities in developing a creative lifestyle; b) lack of capacities in extending virtual contact into face-to-face interactions; and c) limited capacities to enhance self-esteem by using ICTs. In other words, without a positive interrelation between digital and personal capital digital resources are not transformed into social resources. On the other hand, when the interaction between digital and personal capital is positive, some tangible outcomes are visible, such as the capacities in developing a creative lifestyle, in extending virtual contact into face-to-face interactions, and enhancing self-esteem by using ICTs (see Table 4).

3.6. Cultural capital and digital capital

The Cultural capital emerges in three different states: embodied, objectified and institutionalized (Bourdieu, 1983: 47), and are expressed in terms of forms of skills, education, knowledge, and advantages that an individual has, which can, in turn, serve as a currency to obtain other resources. This aspect is particularly true in the digital arena where education and knowledge and their interaction with digital capital might create advantages to obtain other resources, both online and offline. By applying the aforementioned model, if the interaction between digital and cultural capital is negative, at the second level of digital divide, the results are visible in terms of: a) limited capacities to contribute to participatory culture; b) lack of opportunities to contribute to building “new” knowledge; and c) inequalities in accessing different cultural/educative online sources. A negative result means also being a passive consumer of cultural outcomes and having limited capacities to create new cultural products or contribute to the cultural discussion on the digital arena. The online experience is more stimulating and satisfactory when the result of this interaction is positive and users become active proponent of cultural outcomes through their capacities to contribute to participatory culture, having high opportunities to contribute to building “new” knowledge, and accessing different cultural/educative online sources. In

Table 4
“Interaction between Digital capital and Personal Capital”

Interaction	Second Digital Divide	Third Digital Divide
Positive	High capacities in using ICT High confidence in using ICT A positive perception and a high awareness about the potential personal benefits of ICTs.	High capacities in developing a creative lifestyle High capacities in extending virtual contact into face-to-face interactions High capacities to enhance self-esteem by using ICTs.
Negative	Limited capacities in using ICT Lack of confidence in using ICT A negative perception and lack of interest in using ICTs.	Lack of capacities in developing a creative lifestyle Lack of capacities in extending virtual contact into face-to-face interactions Limited capacities to enhance self-esteem by using ICTs.

Table 5
“Interaction between Digital capital and Cultural Capital”

Interaction	Second Digital Divide	Third Digital Divide
Positive	High capacities to contribute to participatory culture	Capacities to reuse in the social realm valuable cultural information acquired online
	Opportunities to contribute to building “new” knowledge Capacities to access different cultural/educative online sources	Abilities to verify the reliability of information/sources Capacity to absorb and elaborate online information
Negative	Limited capacities to contribute to participatory culture	Limited chances to reuse in the social realm valuable cultural information acquired online
	Lack of opportunities to contribute to building “new” knowledge	Inability to verify the reliability of information/sources
	Inequalities in accessing different cultural/educative online sources.	Incapacity to absorb online information (Internet-dependency as an external memory).

digital inequalities studies, several research have operationalized the concept of cultural capital. [Nissenbaum and Shifman \(2015\)](#), for instance, focused on the workings of memes as cultural capital in web-based communities, while [Paino & Renzulli \(2013\)](#) have widened the culturally important forms of capital by including the digital dimension of cultural capital. In this vein, [Hatlevik, Guðmundsdóttir, & Loi \(2015\)](#), [Aviram & Eshet-Alkalai \(2006\)](#) and [Gui & Argentin \(2011\)](#) explored, for instance, how students learn to use technology for learning and developing. However, what is missing is first the attempt to analyse how digital and cultural capitals interact and influence each other, and secondly the attempt to analyse the different tangible and externally observable outcomes that derive from this interaction.

A negative result of this interaction, in terms of tangible outcomes, could mean a) limited chances to reuse in the social realm valuable cultural information acquired online; b) inability to verify the reliability of information/sources; and finally c) incapacity to absorb online information (Internet-dependency as an external memory). The last two points are both related to the so-called overload of information and the inability to verify the reliability of sources and the accuracy of information (an aspect of particular interest in the Post-Truth Era, see [Keyes, 2004](#)), and over-reliance on online information leading to an addictive relationship with the Internet, which is used as an external memory. By contrast, a positive interaction would give users better chances to reuse in the social realm valuable cultural information acquired online, to verify the reliability of information/sources, and being able to elaborate and absorb online information (see [Table 5](#)).

4. Conclusion and remarks

As we have seen, those who do not access the Internet (first level of digital divide), or do not use it “effectively” (second level of digital divide), or are not able to transform the online experience into something concrete and tangible (third level of digital divide), lose noteworthy opportunities in the economic, political, cultural, personal, and social spheres. By contrast, those who access the Internet, have elaborated a high level of digital capital and use the Internet in an “effective” and “productive” way, tend to broaden their opportunities, improving quality of their life and reinforce personal position in society, their wellbeing and their general quality of life. The 5Cs place users at unequal departure points when embracing ICTs, help in forging individuals’ digital capital and interacting with this new capital transform digital resources into social resources. Metaphorically speaking, individuals are not only unequal when sitting in front of the screen (first level of digital divide) but also when reading, processing or decoding the same information (second level of digital divide), as well as when they attempt to reinvest in the social realm resources attained online (third level of digital divide). Indeed, as we have seen, the 5Cs and their interaction with digital capital determine not only how citizens approach and use the internet, but also how they transform the online experience into real outcomes. The “positive” result of the interaction between the 5Cs and the digital capital, provides a better and more profitable online experience. This places individuals in a privileged position, allowing them to transform the valuable resources and knowledge acquired online into real outcomes in the social realm. It is not only knowledge, digital skills and motivation, but also the capacities and possibilities to use the digital capital as a currency to obtain other resources that can improve individual’s life chances. In a digitally-enabled society it becomes crucial to be able not only to physically access, but also to move confidently in the digital arena and get the most out of it.

Evidently, as already stated, the proposed discussion, based on the above approaches to the relations between the digital capital and the 5Cs, does not presume to be exhaustive. Indeed, many other positive and negative “outcomes” deriving from the interaction between digital capital and 5Cs could be observed and analysed. Furthermore, these consequences are not equal for everybody and it might be difficult to isolate the role of digital capital in influencing each single capital. However, this paper has introduced and conceptualized this new capital and set the path to operationalize and empirically test its validity.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.tele.2018.10.006>.

References

- Adams, Bert N., Sydie, R.A., 2001. *Sociological Theory*. Pine Forge Press, Thousand Oaks.
- Aviram, Eshet-Alkalai, Y., 2006. Towards a theory of digital literacy: three scenarios for the next steps. *Euro. J. Open Distance E-Learn.* Retrieved January 15, 2018, from http://www.eurol.org//materials//contrib//2006//Aharon_Aviram.htm.
- Becker, G.S., 1996. *Accounting for Tastes*. Harvard University Press, Cambridge, MA.
- Bourdieu, P., 1983. Forms of capital. In: Richards, J.C. (Ed.), *Handbook of Theory and Research for the Sociology of Education*. Greenwood Press, New York.
- Bourdieu, P., 1984. *Distinction: A Social Critique of the Judgement of Taste*. Routledge & Kegan Paul, London.
- Bourdieu, P., 1985. The genesis of the concepts of habitus and of field, socio criticism. *Theor. Perspect.* 2 (2), 11–24.
- Bourdieu, P., Wacquant, L.J.D., 1992. *An Invitation to Reflexive Sociology*. The University of Chicago Press, Chicago.
- Brooks, B., Hogan, B., Ellison, N., Lampe, C., Vitak, J., 2014. Assessing structural correlates to social capital in Facebook ego networks. *Soc. Networks* 38, 1–15.
- Carpiano, R.M., 2006. Towards a neighborhood resource-based theory of social capital for health: Can Bourdieu and sociology help? *Soc. Sci. Med.* 62 (1), 165–175.
- Chen, W., 2013. The implications of social capital for the digital divides in America. *Inf. Soci.* 29 (1), 13–25.
- Coleman, James S., 1990. *Foundations of Social Theory*. Harvard University Press, Cambridge.
- DiMaggio, P., Bonikowski, B., 2008. Make money surfing the web? The impact of internet use on the earnings of U.S. workers. *Am. Sociol. Rev.* 73 (2), 227–250.
- DiMaggio, P., Cohen, J., 2003. Information inequality and network externalities: a comparative study of the diffusion of television and the Internet. Working Paper 31. Center for Arts and Cultural Policy Studies, Princeton University, Princeton, NJ.
- DiMaggio, P., Hargittai, E., 2001. From the 'Digital Divide' to 'Digital Inequality': Studying Internet Use as Penetration Increases. Princeton University Center for Arts and Cultural Policy Studies Retrieved April 2018 <https://www.princeton.edu/~arts/pol/workpap/WP15%20-%20DiMaggio%2BHargittai.pdf>.
- Drabowicz, T., 2017. Social theory of internet use: Corroboration or rejection among the digital natives? Correspondence analysis of adolescents in two societies. *Comput. Educ.* 105, 57–67.
- Galuszka, P., 2007. Digging out of the digital divide. *Diverse Issues Higher Educ.* 24 (2), 21.
- Gilbert, M., 2010. Theorizing digital and urban inequalities. *Inf. Commun. Soc.* 13 (7), 1000–1018.
- Gui, M., Argentin, G., 2011. Digital skills of internet natives: different forms of internet literacy in a random sample of northern Italian high school students. *New Media Soc.* 13 (6), 963–980.
- Hamelink, C.J., 2000. *The Ethics of Cyberspace*. Sage, London.
- Hatlevik, O.E., Guðmundsdóttir, G.B., Loi, M., 2015. Digital diversity among upper secondary students: a multilevel analysis of the relationship between cultural capital, self-efficacy, strategic use of information and digital competence. *Comput. Educ.* 81, 345–353.
- Helsper, E.J., 2012. A corresponding fields model for the links between social and digital exclusion. *Commun. Theory* 22 (4), 403–426.
- Helsper, E., Eynon, R., 2013. Distinct skill pathways to digital engagement. *Euro. J. Commun.* 28 (6), 696–713.
- Hodgson, G.M., 2014. What is capital? Economists and sociologists have changed its meaning: Should it be changed back? *Cambridge J. Econ.* 38, 1063–1086.
- Hofer, M., Aubert, V., 2013. Perceived bridging and bonding social capital on Twitter: Differentiating between followers and followees. *Comput. Hum. Behav.* 29 (6), 2134–2142.
- Ignatow, G., Robinson, L., 2017. Pierre Bourdieu: theorizing the digital. *Inf. Commun. Soc.* 20 (7), 950–966.
- Jung, J.-Y., Linchuan Qiu, J., Kim, Y.-C., 2001. Internet connectedness and inequality: beyond the divide. *Commun. Res.* 28 (4), 507–535.
- Katz, J.E., Rice, R.E., 2002. *Social Consequences of Internet Use: Access, Involvement and Interaction*. MIT Press, Cambridge, Mass.
- Keyes, R., 2004. *The Post-Truth Era: Dishonesty and Deception in Contemporary Life*. St. Martin's Press, New York.
- Lewis, K., Kaufman, J., Gonzalez, M., Wimmer, A., Christakis, N., 2008. Tastes, ties, and time: A new social network dataset using Facebook.com. *Soc. Networks* 30 (4), 330–342.
- Lopez-Sintas, J., Filimon, N., García-Alvarez, M.E., 2012. A social theory of internet uses based on consumption scale and linkage needs. *Soc. Sci. Comput. Rev.* 30 (1), 108–129.
- Muncer, S., Loader, B.D., Burrows, R., Pleace, N., Nettleton, S., 2000. Form and structure of newsgroups giving social support: a network approach. *CyberPsychol. Behav.* 3 (6), 1017–1029.
- Munk, Martin D., 2009. Transnational investments in informational capital. A comparative study of Denmark, France and Sweden. *Acta Sociol.* 52 (1), 5–23.
- Nettleton, S., Pleace, N., Burrows, R., Muncer, S., Loader, B.D., 2002. The reality of social support. In: Woolgar, S. (Ed.), *Virtual Society?* Oxford University Press, Oxford.
- Newhagen, J.E., Bucy, E.P., 2005. Routes to media access. In: Bucy, E. (Ed.), *Living in the Information Age*. Wadsworth, Belmont, CA, pp. 221–230.
- Nissenbaum, A., Shifman, L., 2015. Internet memes as contested cultural capital: the case of 4chan's /b/ board. *New Media Soc.* 1 (19), 483–501.
- Paino, M., Renzulli, L., 2013. Digital dimension of cultural capital: the (in)visible advantages for students who exhibit computer skills. *Sociol. Educ.* 86 (2), 124–138.
- Pénard, T., Poussing, N., 2010. Internet use and social capital: the strength of virtual ties. *J. Econ. Issues* 44 (3), 569–595.
- Prieur, A., Savage, M., 2013. Emerging forms of cultural capital. *Euro. Soc.* 15 (2), 246–267.
- Putnam, R.D., 1995. Tuning in, tuning out: the strange disappearance of social capital in America. *Politica. Sci. Politics* 28, 664–683.
- Putnam, R.D., 2001. *Bowling Alone: The Collapse and Revival of American Community*. Simon & Schuster, New York.
- Ragnedda, M., 2017. *The Third Digital Divide. A Weberian Approach to Digital Inequalities*. Routledge, Oxford.
- Ragnedda, M., Mutsvauro, B., 2016. Demystifying digital divide and digital leisure. In: McGillivray, D., McPherson, G., Carnicelli, S. (Eds.), *Digital Leisure Cultures: Critical Perspectives*. Routledge, pp. 107–119.
- Reynolds, T., Strykowski, P., 2014. *Skills and jobs in the Internet economy*. OECD, Paris. Retrieved February 2018, from http://www.oecd-ilibrary.org/science-and-technology/skills-and-jobs-in-the-internet-economy_5jxvbrjm9bns-en.
- Roberts, E., Townsend, L., 2015. The contribution of the creative economy to the resilience of rural communities: exploring cultural and digital. *Capital. Sociologia Ruralis*.
- Rogers, E.M., 2003. *Diffusion of Innovations*, fifth ed. Free Press, New York.
- Seale, C., Ziebland, S., Charteris-Black, J., 2006. Gender, cancer experience and internet use: a comparative keyword analysis of interviews and online cancer support groups. *Soc. Sci. Med.* 62 (10), 2577–2590.
- Servon, L.J., Nelson, M.K., 2001. Community technology centers: narrowing the digital divide in low-income, urban communities. *J. Urban Affairs* 23 (3/4), 279–291.
- Shah, D.V., Kwak, N., Holbert, R.L., 2001. "Connecting" and "Disconnecting" with civic life: Patterns of internet use and the production of social capital. *Polit. Commun.* 18 (2), 141–162.
- Skjøtt-Larsen, J., 2012. Cultural and moral class boundaries in a Nordic context. Findings from a city in Denmark. *Euro. Soc.* 14 (5), 660–683.
- Song, L., 2011. Social capital and psychological distress. *J. Health Soc. Behav.* 52 (4), 478–492.
- Sørensen, E., Torfing, J. (Eds.), 2007. *Theories of Democratic Network Governance*. Palgrave-Macmillan, Basingstoke, UK.
- Syed, P., Whiteley, P., 1997. Political capital formation among British party members. In: van Deth, Jan W. (Ed.), *Private Groups and Public Life: Social Participation, Voluntary Associations and Political Involvement in Representative Democracies*. European Political Science Series. Routledge/ECPR Psychology Press, London.
- Tapscoff, D., Lowy, A., Ticoil, D., 2000. *Digital Capital: Harnessing the Power of Business Webs*. Harvard Business School Press Boston, Massachusetts.
- Thiessen, V., Dianne Looker, E., 2007. Digital divides and capital conversion: The optimal use of information and communication technology for youth reading achievement. *Inf. Commun. Soc.* 10 (2), 159–180.
- Tolbert, C.J., McNeal, R.S., 2003. Unraveling the effects of the Internet on political participation? *Polit. Res. Quart.* 56 (2), 175–185.
- van Deursen, A., Helsper, E.J., 2015. The third-level digital divide: Who benefits most from being online? In: Robinson, L., Cotten, S.R., Schulz, J., Hale, T.M., Williams, A. (Eds.), *Communication and Information Technologies Annual. Studies in Media and Communications*. Emerald Group Publishing Limited, Bingley, UK, pp. 29–52.
- van Deursen, A.J.A.M., van Dijk, J.A.G.M., 2014. The digital divide shifts to differences in usage. *New Media Soc.* 16 (3), 507–526.

- van Dijk, J.A.G.M., 2005. *The Deepening Divide. Inequality in the Information Society*. Sage, London.
- Warshauer, M., 2004. *Technology and Social Inclusion: Rethinking the Digital Divide*. The MIT press, London.
- Weber, M., 1949. *The Methodology of the Social Sciences*. The Free Press, New York.
- Weber, L.M., Loumakis, A., Bergman, J., 2003. Who participates and why?: An analysis of citizens on the internet and the mass public. *Soc. Sci. Comput. Rev.* 21 (1), 26–42.
- Yardi, S., 2010. A theory of technical capital. [White Paper]. School of Interactive Computing Georgia Institute of Technology. Retrieved May 2018 <http://tmisp.umd.edu/position%20papers/Yardi-SocialMediatingTech.pdf>.
- Ziersch, A.M., 2005. The health implications of access to social capital: Findings from an Australian study. *Soc. Sci. Med.* 61, 2119–2131.
- Zillien, N., Hargittai, E., 2009. Digital distinction: status-specific types of internet usage. *Soc. Sci. Q.* 90 (2), 274–291.

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