

## Research Article

# All Work and No Play? Judging the Uses of Mobile Phones in Developing Countries

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### **Abstract**

*Despite the multiplicity of affordances embedded in information and communication technologies (ICTs), most ICTs for development (ICTD) interventions tend to expect that technology will be used primarily for “serious” purposes. However, user behaviors suggest that leisure-related activities feature prominently compared to other behaviors considered more likely to generate development outcomes. Theories about play developed by philosophers, psychologists, and anthropologists offer useful ideas to understand these ludic behaviors. This article reviews typical stances toward mobile phone use within the ICTD community and argues for a reframing of ICTD discourse that acknowledges playful uses of technology as essential for personal development and adaptation to social and technological change.*

Despite the multiplicity of affordances embedded in information and communication technologies (ICTs), most ICTs for development (ICTD) interventions tend to adopt traditional perspectives on how technologies can facilitate socioeconomic development. These interventions may adopt a linear view of development, expecting particular patterns of behavior and limiting goals to specific sectors deemed necessary for development. For example, the World Bank’s recent “ICT for Greater Development Impact” strategy seeks to transform delivery of public services, generate innovation and improve competitiveness, and promote broadband infrastructure (2012a, p. vi). Its “Maximizing Mobile” report (World Bank, 2012b) focuses on agriculture, health, mobile money, employment, and governance, only discussing social networking in terms of its application in civic engagement.

In other cases there is disapproval or discouragement of “nonserious” ICT uses, considered a waste of time and resources for people whose primary goal should be development. As a part of a growing effort to revise these visions of ICTD, some scholars provide examples of ICT projects that were considered failures because target populations showed a preference for accessing entertainment content (e.g., Pal & Chirumamilla, 2013; Ratan & Bailur, 2007).

Across the globe, user behaviors suggest a reality in which gaming and other leisure-related activities feature prominently, to the apparent detriment of other behaviors considered more likely to generate development outcomes. While the value of recreation is not totally discounted, there is a general sense in which ICTs-for-leisure stands in opposition to ICTs-for-development, evidenced in a longstanding “tension between paternalistic welfare-related pressure and entertainment usage in ICTD projects” (Ratan & Bailur, 2007, p. 7).

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But lumping together all “leisure” uses of technologies may in itself imply a negative judgment, these uses being unified only by their “nonseriousness.” In particular, we concentrate our attention on those uses related to play and games. To better understand the implications of these ludic behaviors, the wealth of theory about play developed by philosophers, psychologists, and anthropologists offers ideas worth considering.

This article presents an overview of typical stances toward mobile phone uses within the ICTD community and, drawing on a variety of scholarship on the richness and complexity of human ludicity, argues for a reframing of ICTD discourse that acknowledges playful activities as essential for personal development, particularly in a rapidly evolving environment, and as tools for individual and collective adaptation to social and technological change. We suggest that a “right to play” in the new communication environment should be recognized for all people, irrespective of poverty status in the interest of their personal well-being and a balanced development.

## Some Notes to Begin

In this article, we focus primarily on computer and mobile phone gaming, which should be distinguished from other forms of entertainment and recreational activities such as downloading music and videos. Play is a specific area of human life from cognitive and social points of view, and we should be aware of the implications of tagging it as “entertainment”; entertainment being represented as opposed to work, entertainment being, by definition, useless. In this respect we question the distinction between “useful” versus “useless” activity, and particularly the implication that only “useful” activities may be favorable to cultural and economic growth. Much of what seems useless may be important in the development of persons and communities. This is particularly true of play, which cannot be recognized as “useful” without losing much of its playful nature.

What defines play is not simple pleasure, but its value for adaptation and personal (but also social) development. Major philosophers, for example, Dewey (1911) and Mead (2001), and the founders of cognitive psychology, Piaget (1962) and Vygotsky (1978), have found that playfulness is essential for the child to explore his or her environment and especially to produce inventive responses to a world of social exchange and of things that get their uses and even their names through children’s incessant experimentation. Other developments in play theory during the 20th century (e.g., Bateson, 1955; Caillois, 1961; Huizinga, 1955) have demonstrated that this role of playfulness is not limited to childhood, although its presence tends to be encircled and segregated from daily life.

Even though it remains conceptually crucial, we are conscious that the distinction between play and other forms of leisure is not always easy to establish and maintain in practice. Playful uses of social interchange have always existed, and social networks multiply the occasions for this type of exchange. This is part of what Ortoleva (2014) has defined as the behavior typical of the *homo ludicus*, living in the grey area between classical games and play—classically divided from ordinary life by a frame or magic circle (Huizinga, 1955)—and “serious” activities. It is a grey area in which games may become tools for education, for organizational life, for scientific research, where all kinds of practical activities (including war) may use interfaces taken from playful activities, particularly videogames. Drawing on postcolonial cultural theory (e.g., Appadurai, 1996), it could be argued that playful uses of conversations, SMS, or music may become the means for cross-cultural fertilization of traditional play practices (Hamayon, 2013) and the possibilities offered by modern technologies. In many cases adolescents may be more attracted to these than to videogames proper, which may be expensive or difficult to find. For example, South African mobile phone users associated the instant messaging and content platform, MXit, with gaming and reportedly used it for multiplayer games, MXit contact-gathering games, “playful social interactions or ruses” as well as “extensive linguistic and orthographic play” (Walton & Pallitt, 2012, p. 354).

With this proviso established, in the rest of this discussion we interchangeably use the terms “playful” and “ludic” to refer to gaming activities, “communication-oriented” to refer to interpersonal exchanges and social networking, and “entertainment” and “recreational” to refer to the general category of supposedly “non-serious” behaviors, including gaming and communication.

The next section of this article presents research findings on computer and mobile phone use in

developing and emerging economies, emphasizing the prevalence of interpersonal communication, social networking, and gaming. This is followed by a review of attitudes toward recreational ICT uses in the context of socioeconomic development ideals. Conscious that our view could and should be deepened and substantiated by more research evidence, in the final section we outline our preliminary argument for the value of play for human (as opposed to specifically social or economic) development.

## Recreational ICT Use

Empirical research on gaming in developing countries is in short supply. As Heeks (2008a) observes,

Tens of millions of people in developing countries play computer games on a regular basis. Computer games companies in developing countries employ tens of thousands and earn tens of millions of US dollars annually. Yet you would hardly know it from the research literature, which seems to have almost willfully ignored this area. (p. 1)

Heeks (2008a) characterizes the relationship between computer games and development in four ways: 1) consumption of games for education, 2) consumption of games for leisure, 3) production of gaming services, and 4) production of gaming products. A review of available literature indicates that the games for leisure category has received the least amount of attention in ICTD research, although even before the iPhone-initiated smartphone era, simpler games (e.g., Tetris and Snake) have been available on mobile phones, and their use remains widespread among people who cannot afford or do not have access to smartphones.

While some work is emerging on the potential of games for education and skills development (e.g., Kam, Kumar, Jain, Mathur, & Canny, 2009; Kolko & Putnam, 2009; Kolko, Racadio, Deibel, Karuse, & Prempeh, 2013), nascent game and app production industries (e.g., Andjelkovic & Imaizumi 2012; Griliopoulos, 2013; Snyders, 2009), and provision of gaming services (e.g., Heeks, 2008b; Lehdonvirta & Ernkvist, 2011), limited data exist on the precise nature of online and mobile phone-based gaming in the developing world. Such statistics as are available suggest this phenomenon is highly advanced in some regions (e.g., Southeast Asia), growing in others (e.g., Latin America), and more limited in most (especially sub-Saharan Africa). Nevertheless, the appeal of computer games is not limited to advanced economies (e.g., Sommer, 2013; Hamilton, 2011). It is even possible that the extent of participation is underestimated since market statistics are often based on sales figures, which are not the best way to assess the diffusion of mobile phone games: First, the basic versions of these games are usually preloaded or downloadable for free;<sup>1</sup> second, the wide circulation of pirated games is not reflected in sales figures.

### Computer/Console Gaming

Mounting evidence shows growing rates of online and offline gaming and a high incidence of other types of recreational ICT uses. For example, in 2011 Pando Networks, a global media distribution company, reported a more than 500% growth in online gaming in developing nations (Hamilton, 2011). Relatively limited data are available specifically on computer gaming in developing countries; however, data on the level of recreational and social interaction activities in general provide some indications.

A survey of 5,000 computer users in cybercafés, telecenters, and public libraries in Bangladesh, Brazil, Chile, Ghana, and the Philippines (sampled at 250 randomly selected venues in each country) confirms that recreational activities dominate (Sey, Coward, Bar, Sciadas, Rothschild, & Koepke, 2013). Consistently across all countries, more than 90% of users favored recreational above other types of activities (Table 1).

There were also high levels of specific recreational behaviors found, with computer games coming in at 45% (Table 2).

Similar observations have been made in other geographic locations, although to differing degrees. Brazil, for instance, is known to have a very active videogame culture (Horst, 2011). Kolko et al. (2013) found that more than 20% of LAN house users in Brazil were oriented to computers by playing games, and about 35%

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1. In a study of 422 students from low-income areas of Cape Town, South Africa (Kreutzer cited in Walton & Pallitt, 2012), the most popular mobile games were found to be the free pre-installed games.

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Table 1. Domains of Activity at Public Access Venues (in the Last 12 Months).

Domain	Percent of Users					
	Bangladesh	Brazil	Chile	Ghana	Philippines	All
Communication and leisure	72	88	92	89	94	87
Education	45	76	74	70	81	69
Employment and income	38	59	55	42	41	47
Health	12	18	37	27	43	28
Language and culture	8	41	50	12	31	28
Governance	11	25	37	18	34	25

*n*=3,895–5,010. Source: Sey et al., 2013.

Table 2. Activities Performed at Public Access Venues.

Domain	Percent of Users
Browse, surf Internet	86
Email	80
Social networking	80
Chat using IM, VoIP	63
Listen/download music	60
Read news/current events	58
Word processing	57
Computer games	45
Watch movies/TV online	31

*n*=5,010. Source: Sey et al., 2013.

used computers for social networking and email. A study of cybercafé users in Uganda reported that about 8% of users “usually” played computer games (Mwesige, 2004). Thinyane (2010) found high levels of daily online recreational activities among student computer users in South Africa—62% for social networking, 45% for other pastimes, and 16% for playing networked games. Looking at social media use, Wyche, Schoenbeck, and Forte (2013) observed high (but constrained) patronage of Facebook by low-income populations in Kenya, mostly at cybercafés.

### Mobile Gaming

Studies in developing countries show that the highest proportion of mobile phone use is devoted to interpersonal communication (e.g., Horst & Miller, 2006; McKemey et al., 2003; Sciadas, Lyons, Rothschild, & Sey, 2012; Scott, Batchelor, Ridley, & Jorgensen, 2004; Wyche, Schoenbeck, & Forte, 2013) but that social networking and gaming also feature prominently in some locations. At this point we note an important limitation: Concrete statistics are largely unavailable in the public sphere; what can be found largely falls into the category of industry reports and journalistic pieces, which are often highly speculative and cannot be properly assessed for academic rigor. Still, drawing on the general trends captured in these reports, indications are that levels of mobile gaming are rising sharply in developing economies. The following summary should be interpreted with caution, considering the source and nature of the data.

Asia-Pacific is widely acknowledged to be the largest and fastest growing mobile gaming market (Table 3), with China and India often receiving special mention (Sommer, 2013; Comviva, 2009; Galarneau, 2014; Radha, 2013).

Market research suggests that “Asian users, in particular Chinese users, seem to have an even stronger

Table 3. *The Global Mobile Games Landscape.*

World Region	No. of Players (m)	Revenue Estimate 2013 (\$)	Year-on-Year Growth (%)
Asia-Pacific	412	5.9bn	25
North America	146	3.0bn	38
Western Europe	129	2.3bn	63
Eastern Europe	88	420m	39
Latin America	84	400m	33
Middle East and Africa	105	260m	29

Source: Sommer, 2013.

preference for hedonic mobile services, such as games, music and video" (Liu & Li, 2011, p. 890). Casual games<sup>2</sup> tend to be the best liked (Research, 2013). Indeed, Rovio reportedly announced in 2012 that China had the most daily players of the hugely popular game Angry Birds (Butcher, 2012). According to Galarneau (2014), in 2012 mobile gaming comprised 94% of games revenue growth in China. Games are believed to be the most popular category of paid apps in India, where 58% of mobile gamers pay for games (Radha, 2013), and the gaming industry grew by 16% to \$227 million in 2012 (Galarneau, 2014). Along the same lines, a 2011 Nielsen study found that about 75% of the time users in India spent on their smartphones went into activities such as social networking, games, and entertainment (Page, Molina & Jones, 2013, p. 24).

Countries in Africa are less represented in the data and are mostly seen as "virgin territory" (industry executive quoted in Southwood, 2012), with the possible exception of South Africa where Walton and Donner note the emergence of mobile games as "cultural capital" for young teens (2012, p. 26). But there is no lack of enthusiasm about the future of mobile gaming on the continent. Much of the conversation surrounds the potential for game developers in this region to enter the gaming industry (local and global) and "African" mobile games emerging from a few countries (Coetzee, 2013; Douglas, 2013; Duthiers & Brennan, 2012; Mwesigwa, 2013; Magubane, 2012; van Vugt, 2012; Wakoba, 2012; Wiehahn, 2014).

Determining how much and what types of mobile gaming are going on is trickier, although a few data points from South Africa may signal trends. There, mobile gaming is said to be the second largest category of videogames, representing 17% of total spending (Staff Writer, 2012), and 2011 survey data indicate that mobile phones are the primary platform for daily digital gaming (Walton & Pallitt, 2012, p. 20). An infoDev study found that greater than 40% of respondents used their phones for playing games, noting also that social networking and entertainment applications were popular among urban youth (Calandro, Gillwald, Deen-Swarray, & Stork, 2012; also Walton & Donner, 2012). And more than half of mobile phone users in another study said they had used their phone to play games the day before (Kreutzer, 2009).

All this takes place, yet the amount and type of gaming that occur in developing countries are circumscribed by the resources (type of handset, bandwidth, battery life, cost of data) mobile phone users have (see, for example, Walton & Donner, 2012; Wyche, Forte, & Schoenbeck, 2013; Wyche, Schoenbeck, & Forte, 2013). Comviva (2009) research indicates a correlation between the price of games and the number of downloads; for example, in the Middle East and Africa, where games are more expensive, there was a lower average number of downloads per consumer per month (0.8 for Asia Pacific, 0.5 for the Middle East, and 0.25 for Africa). However, the diffusion of casual games such as Angry Birds indicates a form of viral diffusion that touches all nations, including those with high poverty levels (see, for example, *African Slum Journal's* 2012 video report on mobile gaming in a rural Kenyan community).

This sampling of research, though limited in some respects, provides a strong indication that ICTs, and especially mobile phones, play an important entertainment and pleasure function for users, even in resource-constrained populations. It provides support for the view that "the motivation of entertainment is far more

2. Games that tend to be used for playing while traveling, during pauses, and in other fragments of time.

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powerful than perceived 'needs' of low-income communities. . . . [P]eople everywhere, when given a powerful tool, are as apt to use it for entertainment as for other 'productive' uses" (Smyth, Kumar, Medhi, & Toyama, 2010, p. 760). Yet, the ICTD community generally pays little attention to the emerging literature in this space (Arora & Rangaswamy, 2013). We discuss prevailing attitudes on this issue in the next section.

## Achieving Development: All Work and No Play?

### *Typical ICTD Goals*

The idea that ICTs can and even should be deliberately used to pursue specific development goals carries an assumption that a logical path leads from ICT use to socioeconomic change. This view is buttressed by econometric analyses (e.g., Roller & Waverman, 2001; Waverman, Meschi, & Fuss, 2005) that show higher GDP growth rates in countries with higher levels of mobile phone diffusion. These results have been reported by various organizations and researchers as evidence of the importance of ICTD programs (e.g., Deloitte, 2012; World Bank, 2012a). However, whereas these analyses usually focus on general subscription levels and economic indicators, ICTD efforts tend to be geared toward specific outcomes: health, education, and other such domain-specific interventions. A review of reports on ICTs in developing countries demonstrates this focus: Typical issue areas covered by individual projects include gender, agriculture, education, civic engagement, commerce, health, and political empowerment (see, for example, summary reports by Batchelor et al., 2003; Souter et al., 2005; World Bank, 2012b). The underlying theories of change associated with these projects typically trace a direct path from the project's provision of ICT-based tools and services to particular types of uses and outcomes. Academic research also focuses on similar areas; for example, Gomez (2013) identifies the following domains in an analysis of ICTD-focused academic literature: business, empowerment, education, e-government, minorities, health, gender, agriculture, youth, environment, relief, and disabilities.

### *Perceptions of Play in Development Contexts*

With all the research confirming that even in low-income communities, ICT users will engage in high levels of social and recreational activities, questions have arisen about the extent to which ICT-driven development should be a strategic component of national development plans. Interestingly, a Telecentre.org (arguably the most development-oriented ICT interventionists) guidebook suggests that "telecentres may . . . provide good venues for entertainment: cartoons for children, drama shows, movies, sports for adults or online radio stations" (Mayanja, Acevedo, Caicedo, & Buré, 2014, p. 82). The guidebook implies recreational uses of ICTs do not need to have "development" value to be supported by development agencies: "[S]ome of the content and services may not be strictly developmental in nature, like in entertainment and news, but there will nevertheless be an audience for it" (Mayanja et al., 2014, p. 87). The guidebook further includes the emergence of "new recreational opportunities for excluded populations" as an outcome indicator in its evaluation framework (Mayanja et al., 2014, p. 120).

**Negative perceptions.** On the other hand, although not often documented in print, a general perception in the ICTD field holds that recreational behaviors contribute to development only if they can be linked to benefits in development domains. As a journalist observed, "[W]estern creators [of videogames] who target the developing world over a global market tend to have a developmental or educational agenda" (Griliopoulos, 2013). Thus, in their study of mobile phone uses, Ferreira and Höök (2012, p. 1) observed "tensions that emerged between these playful uses and other, more instrumental goals, which some viewed as being of a higher importance." The tendency to see these behaviors as needing to be "rectified" raises questions about the relative importance of community needs vs. desires, and utility vs. freedom (Ferreira & Höök, 2012; Smyth, Kumar, Medhi, & Toyama, 2010, p. 761) within development agendas. This mindset overlooks the strategic and paradoxical position of play as an aspect of personal and social development: useful *precisely* because of its uselessness, free because it is regulated.

Take, for instance, Furuholt, Kristiansen, and Wahid (2008), who studied Internet café users in Indonesia and Tanzania. The authors clearly do not object to entertainment uses of the Internet; indeed, they acknowledge that categorizing Internet use as serious or unserious is "dubious and in any respect relative," (p. 130)

and also that “entertainment activities . . . could . . . build confidence and skills for higher private and social gains from Internet access at a later stage” (p. 138). Nevertheless, the authors choose to ascribe serious versus nonserious labels to usage patterns in their study, arguing that they “may still be applicable in the contexts of poor countries when related to societal usefulness and potentials to mobilise resources for communal development” (p. 130). In this context, they take serious uses to cover Internet activities that “create substantial learning externalities and thus social profits” such as “access to online literature and other sources of novel information” (p. 130), while unserious uses encompass

[t]he use of the Internet for recreational purposes or illegal practices with small or negative social gains. That may be *harmless amusement and individual diversion, like computer games and listening to music*, or it may be violating ethical norms or legal laws. (p. 130, italics ours)

The grouping together of recreation and illegal activities is striking. The authors’ assumption is that “business and instrumental use is a priori regarded to yield higher learning effects than communication and recreational use. Presumably, more serious use also implies higher social gains” (p. 137).

A similar critique can be found in Mikre (2011, p. 120), who states that “students tend to misuse the technology for leisure time activities and have less time to learn and study.” Likewise, Alexander (2013), reporting on a study of U.S. youth, observes:

Studies showed that some young people from poorer families became so entranced by ubiquitous Internet access that they wasted time with social networking sites, games, and videos, and thus fell behind academically . . . Experts asserted that the problem was that most of that time was spent on entertainment rather than education, which only served to widen what some called “the time-wasting gap.” (2012, para. 7)

Bailur (2007) illustrates the development agency standpoint with a quote from a research subject:

[I]t’s really development, development, development. We can either approach community radio as what the community wants. If you make it that way, it will be music only. But at [the donor agency] we can’t justify all this equipment to play music all day. There has to be a development angle. (p. 9)

And from a policy perspective, while Souter et al. (2005, p. 16) point to the social value of universal access, they conclude that “the high level of use of the telephone for social networking implies that subsidised access should not be required in most rural locations.”

**Positive perceptions.** Other parties have responded to the gaming trends by shifting their attention to uncovering what development-related benefits could be derived from gaming. They highlight the utility of social networking for building social capital or developing digital skills and the educational potential of games as positive aspects of recreational ICT use (e.g., Donner, 2006; IICD, 2013; Kolko & Putnam, 2009). A new facet of ICTD, “serious games” or “games for change,” emerged in the early 2000s that focused on both advanced and developing economies (see Ritterfeld, Cody, & Vorderer, 2009, for a review of the field). Few within this field (e.g., Fiorita, 2011; Kolko & Putman, 2009) view ICT use for pure pleasure as germane to socioeconomic development.<sup>3</sup> However, efforts here are driven by a positive orientation toward “useful” gaming, giving rise to data demonstrating that recreational activities can support development agendas, for example, improving employability by building workplace skills (e.g., Kolko, Racadio, Deibel, Krause, & Prempeh, 2013), supporting the development of ICT skills, or connecting people to opportunities through their social networks (Sey et al., 2013).

Sey et al. (2013), for instance, found that 94% of those who used computers in public access venues for recreational activities claimed using the computer had improved their ICT skills; and email and social networking with family and friends were the most important resources for about one third of people engaging in some goal-oriented computer activity (e.g., health). People who reported high levels of recreational computer use also reported high levels of benefits in traditional development domains (Sey et al., 2013). Kolko et al.’s (2013)

3. On the other hand, Walton and Pallitt (2012) hint at the possible emergence of a “digital gaming divide,” driven by lack of attention to the forms of gaming available to people with limited resources and to the use of gaming accessibility and capability as a form of social capital.

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unpacking of the distinctions between instrumental (useful) and non-instrumental (less useful) computer activities showed not only that “almost any application can be used for either instrumental or non-instrumental purposes” (Sey et al., 2013, p. 173), but also that both types of activities supported development of the types of skills employers seek.

**Growing critiques.** Overall, there is a tendency to look for “development” impact in anything low-income populations do with ICTs. However, attitudes are changing: In a discussion of the shift away from technocentric digital divide concerns, Galperin (2010, p. 53) stated:

A new consensus is emerging among scholars and practitioners concerned with mobilizing new information and communication technologies for development goals. It is based on platform agnosticism; it shuns best practices in favor of policy diversity and celebrates alternative ICT development paths.

While this new consensus is increasingly evident in emerging scholarship on ICTD (e.g., Donner, 2010; Gurumurthy & Singh, 2009; Rangaswamy & Cutrell, 2012; Ratan & Bailur, 2007; Steinberg, 2003; Toyama 2011; Walton, Yaaqoubi, & Kolko, 2012), attitudes toward purely recreational and, particularly, playful uses of ICTs have not changed much. Overall, it appears that to the ICTD community, ICTs-for-leisure stands in opposition to ICTs-for-development; recreational uses of ICTs only contribute to development if they are at least tangentially linked to some other, more development-oriented outcomes. Playful activities are acceptable if they are “serious,” even though all relevant literature about human ludicity (particularly Bateson, 1955) indicates “serious play” is a paradox, since playing with a practical goal in mind ceases to be perceived as playing.

As long as this mindset prevails, there will be some way to go before attitudes toward ICTs in the developing world are open to a less simplistic representation of human nature. The existence of a brand of activity (ICTs for Development) dedicated to extracting “development” from ICT use, laudable as it may be,<sup>4</sup> perpetuates the distinction between useful and useless activities and clouds the ability to consider certain types of behavior such as playfulness as relevant to socioeconomic development.<sup>5</sup> However, human ludicity is essential to personal and sociocultural development, as we discuss next.

## A Serious Case for Play

Our perspective on the prevalence of entertainment, and particularly of playing and games, in ICT uses in developing countries is based on three propositions:

**Proposition 1:** Technologies, old and new, should not be considered only as tools toward a goal: Their instrumental functions are only one part of their social presence and cultural influence; therefore, engaging in apparently “useless” behaviors is not necessarily irrational compared to those whose efficacy is measurable. They should also be seen as parts of adaptive behaviors by which people move around in a social and technical environment. Technologies are learned by adaptation, so a specific use often has an indirect influence on other possible uses (Rosenberg, 1982). In particular, modern ICTs are decreasingly tools for specific goals and more often instruments for the information hunting/gathering behavior typical of the electronic age (Meyrowitz, 1985).

The expressions “learning by adaptation” and “information hunting/gathering” should not be understood in strictly teleological terms (such as learning some predefined ability or seeking information only for specific ends) but in terms of a continuous inventing/discovering of one’s place in the (social, physical, informational) environment in ways that may differ from expectations and conscious strategies. Understanding how ICTs (or other technologies) may help development, in both the personal and social-economic meanings of the term, implies an observation of often-nonlinear processes involving individual and group adaptive behaviors.

**Proposition 2:** People do not use one medium in isolation from others; they live and use media as a system in which personal conversation, written information, mass media, and new media get their meaning and

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4. E.g., Heeks’ (2009) three arguments for ICT4D: moral, enlightened self-interest, and personal self-interest.

5. The terminology “ICTs and development” is less prescriptive and focuses on the integration of ICTs into daily life in developing countries. However, not much work here has addressed ludic behaviors directly.

usefulness not only from their singular use but also from each other. The generally implicit “meaning” that each medium is assumed to have is strictly related to the “meanings” of the other media that coexist with it. If development is tied to a growing ability of individuals and groups to master ICTs as an *environment*, we should understand how they “move around” or “inhabit” the system.

From this point of view, the opposition between “useful” and “useless” activities is generally short-sighted because it does not evaluate the interdependence of communication activities or it schematizes them in linear models such as “games for learning.” So, for instance, the growing use of email or SMS for social relations may affect the width and structure of social groupings and may influence the spread of literacy in a way that may be partially independent of formal schooling. And games are one way in which people learn to live in and with a changing media system, even though, strictly speaking, the games have no direct use.

**Proposition 3:** Each medium, as part of a historically defined media system, generally embodies a myth or a series of possible myths and values (e.g., the press with enlightenment, radio and television with standardization, the Internet with interactivity). These myths are often ideologically biased. It would be erroneous to simplistically apply in different cultures the myths that appear self-evident in Western culture or to confuse the myth implicit in media (as perceived by the dominant cultural apparatuses and their users) with the concrete uses of those media.

Much of what has been written about “useful” ICT activities is based on the Western model and *ideal* of development, which is considered to be objectified by being “embedded” in technologies. So tagging music and videos as entertainment in development contexts conforms to the Western distinction between work and leisure and arguably amounts to applying Industrial Era standards that in postindustrial advanced economies are considered at least partially obsolete.

Starting from those three propositions, we pose the questions: Why are people in developing countries using ICTs for play purposes? How should we evaluate these activities in terms of “development” in the full sense of the word (cognitive, social, technical, economic)?

## Accounting for Gaming in Development Theory

There is a rich, albeit fragmentary literature about the human impulse to play and the role of play in the evolution of the person and the species, that encompasses anthropology (Caillois, 1961; Geertz, 1973; Hamayon, 2013), history (Huizinga, 1955), cognitive psychology (Piaget, 1962; Vygotsky, 1978), cybernetics (Bateson, 1955), and psychoanalysis (Bruner, 1983; Winnicott, 1971). While it is impossible to extract a consistent “play theory” from these different approaches, some basic concepts are widely shared.

- Play is a universal activity that is particularly essential for humans to develop major abilities related to imagination, regulated behavior, construction of symbolic systems, and development of the self, a social being.
- Play can be based on some transcultural patterns which may appear in totally different civilizations and, at the same time, can be one of the most specific manifestations of different cultures.
- Play, so typical of the earliest stages of human development that in the first two–three years of childhood, it identifies with life itself (Dewey, 1911), later undergoes a series of differentiation stages, but remains impossible to do without during the human lifetime.
- Play is a paradoxical behavior, useful because useless, free and regulated, otherworldly and necessary for adaptation to the environment.

These ideas, now generally accepted in the study of individual development, have not been used in theories of socioeconomic development. We now indicate a few of the inspirations we may get from the idea of play and games proposed by the authors cited above.

**Playing with machines.** The impulse that leads so many people to play with/through electronic machines (Ortoleva, 2012a, 2012b; Vial, 2012) is a “new” phenomenon, as recent as the 1980s in the West, even more recent in developing countries. Thus, regardless of location, play should be the object of research to

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inform our understanding of the new technological environment. Play, as an individual behavior, is not only “useful” to *learn how to use* new machines, it is one of the ways by which we *learn to live with them*. Considering that these kinds of playful activities are both conditioned by cultural differences and more “global” than many other aspects of human behavior, they are crucial for a development theory that crosses cultural borders.

It is important to note that an increase in ICT uses for playing/gaming has been developing in the Western world in the same historical span as they have been growing in poorer countries. According to some research, game applications are the most widely downloaded and used of all smartphone apps (GSMA, 2013). Are there common needs at the root of this cross-cultural behavior? If so, which needs? What is old and what is new in playing and gaming with ICTs?

We do not claim to have the answers to these questions. We do, however, propose some hypotheses around mobile gaming to initiate thinking on these issues. We suggest them as ways for the ICTD community to approach and account for ludic uses of ICTs by low-income populations.

***Mobile gaming as an adaptation process.*** The ways in which people play are never reducible to a static “text,” (Geertz, 1973) but are always the combination of inventive behaviors with the authority of accepted rules. This is why play, which is in infancy *the* adaptive behavior by which children learn to know their environment, to live in it, and at the same time, to conform it to their personal (mental and physical) environment, may also in higher ages have a strategic function for learning how to live in that peculiar environment that is called “society.” “Playing with machines” should be understood not (in often-superficially psychological terms) as addictive behavior or as an individualistic, useless behavior but as one of the ways in which young generations are growing up in a world where a new type of presence, that of the “thinking machines,” has become part of a society made of people *and* artifacts (Latour, 1992).

As a consequence, ludic behaviors, particularly the “new” ones, in developing countries should be studied and understood in terms of a continuous invention/exploration of the world by those who play, however repetitive and banal the games may seem. The simplest playful uses of mobile phones are ways to appropriate many apparently irrelevant parts of those devices (e.g., Ferreira & Höök, 2012). The ludic technique of “talking with things,” a primary tool for becoming acquainted with and “making sense of them” (Vico, 1744/1999), is used by adults and children alike to “make sense” of new kinds of things such as electronic machines that are moved by their own programs and that may in a sense “talk back.”

***Mobile Gaming as Unapologetically “Useless.”*** Playing with machines (and making machines play with us) as an adaptive strategy may go from simple forms of interactivity to sophisticated and inventive ones. To say that through it people “learn” to use computers or mobile devices, however, is at once both true and simplistic. It is true—even obvious—if we mean that through this behavior people acquire confidence with machines and become protagonists of their use; but it is simplistic if taken to assume a teleological line. Nobody really wants to play “in order to” acquire some ability. Although the recent trend toward “gamification” in institutions (and even on the battlefield) seems to demonstrate that giving “useful” activities the form of play may be fruitful, this is a shortsighted view of human ludicity. What is important in playing with machines is not “usefulness,” it is the fact that this is a part of how people shape their place in our mobile, “talking,” computerized world.

Ludic behaviors should therefore be studied and understood not in terms of a tool to fulfill a specific task, but as a resource. The abilities we learn through them may be called into action, consciously or semiconsciously, to confront the demands of the environment. In contrast to typical development project goals, the payoff from playfulness arises not from a finalized behavior or from consciously assimilated information, but from a form of internalized knowledge over time. This is true of many abilities acquired through play from early infancy, from the pleasure of balancing ourselves through vertigo-inducing games, to that of understanding other people’s point of view by “acting like” them. This is true also of abilities people learn by playing in adult life, the power of simulation implicit in poker or the mind training typical of many puzzles. This is true in particular of the abilities acquired in playing with intelligent machines that are not only “useful” for daily interaction but in many cases are the possible sources of innovative behavior.

**Mobile Gaming as Cultural Exchange.** The worldwide diffusion of some games may be read as a form of cultural invasion, since the most successful games are generally produced in industrialized countries and diffused to all continents. But considering the active role players take in playing with them and adjusting to their possibilities, another interpretation reads them as tools for cross-cultural exchange. This is an often-ignored, but highly relevant aspect of a larger political issue: the perception of ICTs in developing countries in terms of empowerment versus Westernization. This “banal” type of activity has been able to reach more people in a shorter time, with its apparently content-less contents, than many other cultural expressions that have been the subject of great, even violent debate. This should prompt us to consider that while the benefits of playful activities are less visible than other aspects of our technological culture, they are by no means less important. Consequently, ludic behaviors should be studied and understood in light of:

- how new and global forms of play penetrate different areas;
- how their transcultural diffusion favors (and/or inhibits) intercultural understanding; and
- how older and newer, traditional and imported forms of play interact.

## Conclusion

The purpose of this discussion is not to argue for the “serious games” perspective. Others are making that case well enough. Neither is it to say that facilitating the capacity to play games or spend time social networking should become express development goals (although this could well be the case). Rather, it is to suggest that these activities do not necessarily detract from development goals and, in fact, may have significant value for building well-rounded, adaptable individuals, which are in the long run important values for achieving socioeconomic development. It is also a caution that while “serious games” have their place and function, when games become too serious, they lose their essence as games. Our call to the ICTD field is to recognize ICT gaming for what it is—one of the fastest growing uses of digital technologies globally, evidently in answer to deeply rooted and transcultural demands—and to see ludic behavior as an important component of humanity, irrespective of socioeconomic status.

Our argument is based on the conviction that interpretations of development based on a Western and essentially industrialist view of rationality does not consider the complexity of human needs. What is indispensable for personal growth should not be considered irrelevant for socioeconomic development.

“All work and no play,” runs the proverb, “make Jack a dull boy.” Since the early 20th century, modern education theory from Montessori to Dewey has accepted play as an essential component of personal growth. In an ever-changing technological and social environment where adaptation is a constant necessity, personal formation must be seen not as a single stage of human biography (as it has too often been in industrial cultures) but as a never-ending process that accompanies all life. Thus, play should be understood as equally essential for adults and children; for societies as a whole, not only individuals. Play should not be “tolerated” even as acceptable leisure; it should be recognized as a right to be respected, in terms of time, personal and collective spending, social and institutional acceptance. ■

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