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sociedade e as novas modernidades

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Prefácio

(Des)Igualdades e (In)Visibilidades Sociais na Era Digital

A influência das novas tecnologias nas esferas pública e privada da sociedade, mais do que uma reformulação, originou um novo campo social e interfere diretamente na forma como percebemos o mundo, nos relacionamos com este e com os outros. Relembre-se que na teoria de Pierre Bourdieu (2001), campo surge como uma configuração de relações socialmente distribuídas.

Progressivamente surgiu e consolidou-se um universo de sociabilização: o ciberespaço. Ainda que virtual, existe e produz efeitos. Pode ser definido como o espaço potenciado pelas diferentes plataformas de comunicação digital e assume-se como um modelo de comunicação individual, permitindo ao recetor ser simultaneamente emissor. Espaço de fluxos (Castells, 1996), o ciberespaço traduz a dimensão social da Internet, permitindo comunicação e difusão de informação à escala global, o que provoca um intenso processo de inclusão e exclusão de pessoas na rede.

A referência a sociedades infoincluídas e infoexcluídas do cenário digital é imperativa quando se reflete sobre a geografia dos novos espaços sociotecnológicos. As dinâmicas destes territórios estão diretamente associadas à forma como as variáveis sociais, demográficas, económicas e tecnológicas se condicionam entre si, revelando o potencial de disseminação de informação e conhecimento através das tecnologias.

Neste número especial da Interações propomos uma reflexão sobre (Des)Igualdades e (In)Visibilidades Sociais na Era Digital. Os trabalhos apresentados apresentam resultados de investigação empírica e/ou reflexão teórica sobre visibilidades e invisibilidades sociais criadas por dinâmicas de inclusão ou exclusão digital e mediática, relações do digital com desigualdades em diferentes contextos geográficos, sociais e profissionais, literacia digital e grupos sociais vulneráveis, condicionamentos criados pela tecnologia ao indivíduo em contexto social, entre outros.

O volume abre com um ensaio de Chris Campanioni, que parte da pergunta intemporal “Quem és tu?” para investigar a cultura atual de *IA-catfishing*, métricas de media sociais e a sua manipulação. O artigo tem o interesse particular, nos dias de hoje, de relacionar o surgimento de *fake news* com o “aumento generalizado de *fake*

users”, entendidos estes como “as várias personificações do *self* mesmo e especialmente através da IA”, no quadro de uma articulação crítica de política, economia, corpo e identidade, no contexto do digital, que aponta para a possibilidade de desintegração da “*performance* da identidade e do seu potencial utópico”.

Pontos normativos importantes, a partir de uma perspetiva emancipatória, são também feitos por Mateo Stochetti no segundo ensaio deste volume. Gostaríamos de destacar a sua premissa de que “sem a possibilidade da verdade, o comportamento político fica privado da sua dimensão moral”. Stochetti abstém-se de vincular explicitamente o seu argumento a óbvios eventos contemporâneos no cenário internacional, contudo, o argumento é bastante relevante para uma avaliação crítica de tais eventos. O ensaio apresenta ainda uma visão interessante sobre o conceito de construção social da realidade, em conexão com os conceitos de (in)visibilidade e verdade, tornando-se relevante não apenas para um público interessado em comunicação, media e digital, mas também para um público interessado genericamente em teoria social e epistemologia.

Luca Cigna revê o debate sobre desigualdade digital, apresentando-nos o ‘estado da arte’ sobre o assunto. Cigna organiza a sua revisão considerando aspetos conceptuais e metodológicos, e dimensões relativas a estrutura social, globalização e política. O autor destaca o carácter complexo e multidimensional da desigualdade digital e a sua proeminência nas desigualdades sociais em geral nas sociedades contemporâneas.

Os artigos que se seguem apresentam pesquisas sobre uma variedade de grupos, contextos e/ou aspetos específicos relativos a desigualdades e invisibilidades na era digital, e os desafios e caminhos para superar estas últimas.

Daniel Calderon parte dos três níveis da clivagem digital, operacionalizados em cinco barreiras (acesso, competências, motivação, emoções e utilidade) para estudar os processos pessoais de apropriação da Internet entre jovens de Madrid. O autor identifica assimetrias e barreiras significativas entre os jovens, que se relacionam com o seu background sociocultural e socialização tecnológica. Este artigo contém também uma revisão bibliográfica muito relevante sobre os três níveis da clivagem digital, funcionando muito bem com complementar à revisão da literatura feita por Luca Cigna no artigo anterior.

A análise de Natasha Chuk diz respeito ao fato de que, particularmente nos media sociais, as pessoas tímidas e socialmente vulneráveis são um grupo invisível e desfavorecido. O foco neste tipo de grupo faz-nos olhar para “as formas pelas quais a socialização, a autoexpressão e a individualidade mudaram, permitindo que novas

percepções e formas de ser surgissem”. As ferramentas de media disponíveis para as pessoas “podem tanto melhorar como exacerbar a timidez”. Assim, para a autora, o objetivo é promover a consciencialização da flexibilidade e possibilidade de customização de ferramentas, como as que dizem respeito a privacidade e visibilidade, para que surjam usos e plataformas alternativos que possibilitem “a capacidade de ocultar e revelar informações com um sentido de agência, e propiciar a oportunidade para o usuário atuar em conformidade”.

Delali Dovie descobre que a alfabetização digital faz a diferença no planeamento da aposentação no Gana, com implicações para a inclusão e exclusão sociais, e também que essa diferença é notória na comparação entre trabalhadores dos setores formal e informal. Desse modo, o desafio é aumentar a literacia digital de grupos como o dos trabalhadores de setores informais, a fim de superar essa desigualdade na facilidade e qualidade do planeamento da aposentação. Além disso, o artigo é ainda interessante dentro do campo mais amplo da pesquisa sobre literacias sociais.

Indhira Suero e Bernardo H. Motta pesquisam a conexão entre a adoção, ou não, de novos media digitais e a sobrevivência e crescimento na indústria editorial, focalizando o caso da imprensa negra nos EUA. Para realizar esta pesquisa, os autores encontraram dificuldades metodológicas – principalmente no que se refere ao contacto com informadores privilegiados – que por si só revelam particularidades deste tema de pesquisa e das conexões de questões organizacionais e tecnológicas com questões de (in)visibilidade e (in)justiça. Aqui, o problema central é a confiança, e as propostas que os autores avançam para superá-lo – promover pesquisas qualitativas e etnográficas neste campo – são, em si mesmas, bastante ilustrativas do estado de invisibilidade nesta indústria.

Ioana Ionita foca o papel das ferramentas digitais no ativismo alimentar, como um exemplo de ação contra injustiça social, na Roménia. A principal conclusão é a de que tal papel ainda é incipiente, e isso porque está “severamente limitado por (...) obstáculos legislativos, burocráticos e de infraestrutura”. A particularidade do artigo é focar não o grupo invisível ou em desvantagem, mas sim estruturas e práticas de solidariedade de outros em relação a ele, o que serve como chamada de atenção final de que (in)visibilidades, (des)igualdades e (in)justiça são sempre relações sociais.

Coimbra, setembro de 2018,

Inês Amaral

Maria João Barata

Vasco Almeida

Preface

(In)Equalities and Social (In)Visibilities in the Digital Age

The influence of new technologies in public and private spheres of society, rather than a reformulation, has given rise to a new social field and directly interferes with how we perceive the world, relate to it and to others. One should note that in Pierre Bourdieu's (2001) theory, field arises as a configuration of socially distributed relations.

Progressively, a universe of socialisation has emerged and consolidated: cyberspace. Although virtual, it exists and produces effects. It can be defined as the space boosted by the different digital communication platforms and assumes itself as an individual communication model, allowing the receiver to be simultaneously emitter. Space of flows (Castells, 1996), cyberspace translates the social dimension of the Internet, enabling the diffusion of communication/information on a global scale. This causes an intense process of inclusion and exclusion of people in the network.

The reference to info-inclusive and info-excluded societies of the digital scenario is imperative when it is reflected in the geography of the new socio-technological spaces. The dynamics of these territories are directly associated with the way social, demographic, economic and technological variables condition each other, revealing the potential for dissemination of information and knowledge through technologies.

In this special issue of the journal *Interações* we propose a reflection on (In)Equalities and Social (In)Visibilities in the Digital Age. The articles in the volume present research results and/or theoretical reflection on social visibilities and invisibilities created by dynamics of media and digital inclusion and exclusion, relations between the digital and inequalities in different geographical, social and professional contexts, digital literacy and vulnerable social groups, conditioning created by technology to the individual in social context, among others.

The volume opens with an essay by Chris Campanioni that asks the timeless question "Who are you?" to investigate the current culture of AI-catfishing, social media metrics and its manipulation. The article has the particular interest, today, of linking the rising of fake news with the "widespread rise of fake users", understood these ones

as “the various impersonations of self even and especially through AI”, within a critical articulation of politics, economy, body and identity, in the context of the digital, that points to the possibility of disintegration of “identity-performance, and its utopic potential”.

Important normative points from an emancipatory perspective are also made by Mateo Stochetti in the second essay of this volume. We would like to highlight his premise that “without the possibility of truth, political behaviour is deprived of its moral dimension”. Stochetti restrains himself from explicitly linking his argument to obvious contemporary events in the international scene, yet the argument is quite relevant for a critical assessment of such events. The article further presents an interesting insight on the concept of social construction of reality, in connection with the concepts of (in)visibility and truth, making it relevant not only to a public interested in communication, media and the digital, but also to a public interested in more general social theory and epistemology.

Luca Cigna reviews the debate on digital inequality, presenting us with the ‘state of the art’ on the subject. Cigna organises his review considering conceptual and methodological aspects, and also dimensions concerning social structure, globalization and politics. The author highlights the complex and multidimensional character of digital inequality, and its prominence within social inequalities in general in contemporary societies.

The ensuing articles present researches about a variety of specific groups, contexts and/or aspects concerning inequalities and invisibilities in the digital age, and the challenges and avenues to overcome these last ones.

Daniel Calderon departs from the three levels of digital divide, operationalised in five barriers (access, skills, motivation, emotions and utility) to study personal processes of Internet appropriation among young people in Madrid. The author identifies significant asymmetries and barriers among the youngsters, which relate to their sociocultural background and technological socialization. This article contains also a very relevant literature review on the three levels of the digital divide, performing very well as complementary to Luca Cigna literature review in the previous article.

Natasha Chuk’s analysis concerns the fact that, particularly within social media, shy and socially vulnerable people are an invisible and disadvantaged group. The focus on this type of group makes us look into “the ways that socialization, self-expression, and individuality have shifted, allowing new perceptions and ways of being to emerge”. Media tools available to people “can both ameliorate and exacerbate shy-

ness”. So, for the author, the point is to promote awareness of the flexibility and possibility of customisation of tools, such as the ones concerning privacy and visibility, so that alternative uses and platforms can emerge that make possible “the ability to conceal and reveal information with a sense of agency, and provide the opportunity for the user to perform accordingly”.

Delali Dovie finds out that digital literacy makes a difference in planning retirement in Ghana, with implications for social inclusion and exclusion, and also that this difference is notorious in comparing formal and informal sectors workers. Thereby, the challenge is to increase the digital literacy of groups such as the informal sectors workers, in order to overcome such inequality in the facility and quality of retirement planning. The article is also interesting within the wider field of social literacies research.

Indhira Suero and Bernardo H. Motta research the connection between the adoption, or not, of new digital media and the survival and growth in publishing industry, focusing the case of the black press in the USA. To carry this research, the authors found methodological difficulties – mainly concerning contact with privileged informers – which itself are revealing of particularities of this research topic, and of the connections of organizational and technological issues with (in)visibility and (in)justice issues. Here, the core problem is trust, and the proposals that the authors advance to overcome it – furthering qualitative, ethnographic research in this field – are itself quite illustrative of the state of invisibility in this industry.

Ioana Ionita focuses the role of digital tools in food activism, as an instance of action against social injustice, in Romania. The main conclusion is that such role still is an incipient one, and that is because it is “severely limited by (...) legislative, bureaucratic and infrastructure impediments”. The particularity of the article is to focus not on the invisible or disadvantage group itself but on structures and practices of solidarity from others towards it, which performs as a last reminder that (in)visibilities, (in)equalities and (in)justices are always social relations.

Coimbra, September 2018.

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An Era of AI-personation & Self(ie) Surveillance

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Abstract

Any discussion of the social invisibilities engendered by the Internet necessarily demands further questioning as to how visibility, as an increasing cultural norm, has produced new inequalities in real life. This contribution combines autoethnographic research, social media analysis, and data analytics with theoretical frameworks such as phenomenology and psychology to globally investigate our current culture of AI-catfishing, social media metrics, and metrics manipulation.

My paper raises questions about re-materializing digital divides and inequalities in the “offline world” through citing self-surveillance techniques and algorithmic biases to

show how we are both at the whim of these AI-inflected prejudices but also complicit in reproducing them, whether through government coercion or our own cultural norms and rules. I trace our relationship with music technology to outline a trajectory of sensory disconnect and co-produced community—a framework for understanding current cultural phenomena and the ethics of distributed data, privacy, and the rendering of our bodies as a new kind of transaction, and currency. The rise of fake news is re-contextualized within the widespread rise of fake users: the various impersonations of self even and especially through AI.

Keywords: Social media, AI, selfie, surveillance, facial recognition, celebrity

Uma Época de Personalização pela IA & Self(ie) Vigilância

Sumário

Qualquer discussão sobre as invisibilidades sociais geradas pela Internet requer, necessariamente, mais estudos, sobre a forma como a visibilidade, enquanto norma cultural crescente, produziu novas desigualdades na vida real. Este artigo combina pesquisa auto-etnográfica, análise social dos media e análise de dados com áreas teóricas, tais como a fenomenologia e a psicologia, para investigar globalmente a

nossa cultura atual de IA – *catfishing*, métricas de media social e manipulação de métricas. O meu artigo levanta questões sobre a re-materialização de divisões e desigualdades digitais no “mundo offline” através da referência a técnicas de autovigilância e vieses algorítmicos para mostrar que estamos à mercê desses preconceitos infligidos pela IA, mas também cúmplices na sua reprodução,

seja através da coerção governamental, seja através das nossas próprias normas e regras culturais. Descrevo a nossa relação com a tecnologia da música, de forma a delinear uma trajetória de desconexão sensorial e comunidade co-produzida - uma estrutura para entender os fenômenos culturais atuais e a

ética dos dados distribuídos, a privacidade e a representação dos nossos corpos como um novo tipo de transação e moeda. A ascensão das notícias falsas é recontextualizada dentro do crescimento generalizado de falsos utilizadores: as várias imitações do eu, especialmente através da IA.

Palavras-chave: Media social, IA, selfie, vigilância, reconhecimento facial, fama

Who are you?

Every day waking up and being forced to ask the same thing. What is desire if not this burden? Your whole life on repeat with so many privileged witnesses to watch. I wasn't looking. Looking doesn't work. Not all the time or ever. So I wake up every morning and think about the long quick drift toward the Hudson on Atlantic, or at least I used to, when I lived here. When I lived there. Every morning and sometimes at night, accelerating toward the water so I can lose myself. The Hudson flickers, the park lights flicker, the speeding yellow taxis and black sedans and the other runners flicker and dance all around you and you care about this intensely, with no recognition except the recognition of being inside your flesh for a minute more. Looking out to look in.

In sanctity and solitude we find who we are in the dark as in the light, terrified and softened at the same time to know that when we're stripped away, we can be nothing too.

The truth is I remind you of yourself.

•

The first thing I can remember about working as a model was the comp card; the 8.5x5.5 piece of card stock was your calling card and passport. It took you places. It was not a proof of purchase so much as it was proof your image could be purchased, at a later date and hopefully, at an interesting location.

After taking Polaroids—on a rooftop in Chelsea or in a dilapidated office—the next step was to produce that proof of purchase. A comp card typically contains two pages: a cover page with full-size portrait and a second page with a selection of repre-

sentative shots from the portfolio and basic measurements. Without one, you could hardly get through the door at most castings that weren't cattle-calls. But today, all you need to be a model is a Twitter or an Instagram.

In 2015, during a discussion with students in the "Writing Across Disciplines" course I teach at Pace University in New York City, one woman related an anecdote her friend, an aspiring model, mentioned about a visit to Wilhelmina. "How many friends do you have?" the booker asked the aspiring model. Shrugging, she responded, "Here, or on the Internet?"

The answer, according to my student, according to her friend, was a minimum of one thousand followers on Instagram, one thousand others on Twitter. That number has only risen in 2018, at a moment in which, through rampant metric manipulation, citizenship via social media requires one to *pay to play*. Meanwhile, without the ability—or capital—to potentially re-present themselves to thousands of others in the span of a second, people are denied the opportunity of representation. Agencies, just like the clients and designers that solicit them, are overvaluing social media status by equating likes with dollar signs and cultural capital with the real thing.

People have always paid to be seen; today, people are paying to seem like they are being seen. The perception takes precedence because after enough views, perception materializes into reality. The more popular we seem to be, the more popular we become. It's why two of the five most common hashtags on Twitter in 2016 were #ff and #teamfollowback. In a matter of moments, everybody's status has risen; and like everything else today, our "user engagement" is being counted too. For ten years, Klout, which will have shut its doors four days from this writing, had tasked its team of analysts with measuring each of your social media accounts to eventually pump out a magic number that corresponded with your online influence, on a 100-marker scale.

No one likes being reduced to a number, except when we are the ones counting ours every day, insistently and on demand. In 2012, Forbes named Salesforce the "Most Innovative Company in America." That same year, Salesforce required prospective employees to have a Klout score of at least 35, listing it in a job opening as a "desired skill." Are we, today, at the precipice of manufactured spending? What is the cost of living? And is there an algorithm I can acquire to make me feel more like myself?

When imitation and aggregation are the MO, the real thing and the rarest no longer qualifies as genius but just the opposite. Deviation becomes a rounding error. Deviance becomes grist for someone else's product placement. Coincidentally — or

not — it's much harder to acquire one million followers on Twitter than it is to acquire one million dollars, even though you might have to spend a significant amount of money to pay for those followers. In 2014, 10.1 million North Americans (8.3 percent of the country's population) reported a net worth of at least one million dollars (Frank, 2015) while only 2,643 Twitter accounts *in the world* have at least one million followers¹ as of this writing.

This, too, has its precedence in other eras, as well as other industries, namely celebrity and the birth of publicity that formed in its wake. The allure of the film star, for example, was built on the see-saw between knowledge and mystery, and the desire left by that lacunae is what fills pockets with actual dollar bills. If a celebrity didn't have a viable story line, publicity agents would simply make one up, staging deaths, even, or raising the same body from the ground,² in order to capture the attention of the media, and eventually, an audience. Rita Hayworth's career, too, as Joshua Gamson reveals during an interview with veteran PR agent Henry Rogers, was launched on the announcement of a made-up award for "best-dressed off-screen actress in Hollywood" — a falsified distinction which produced a very real photoshoot that landed on the cover of *Look* magazine.

In our ageless experiment of identity, testing the question "Who are you?" over and over again might yield a satisfying result but one that's likely as tenuous as your old Klout score. We'd like to see ourselves everywhere and see ourselves in everything. Who are you if not me, or the person next to you as you read this; the Matryoshka doll that keeps shedding layers until the big reveal: only another digit on the data map. The flip side to our personal branding is reduction and repetition, a chamber orchestra's echo that is as hollow as the space it requires to proliferate. *Follow me follow me follow me follow me follow me follow me—*

•

To be a model and to be a writer, to be both, comes from the same base desire to manufacture a reality; to prove that fiction is also and forever a truth. Life has always afforded me a lesson in salvage and redemption. I live each moment as though I forget—or fail to admit—that it will only ever happen once. I don't want to have it

1 As of May 25, 2018, according to Twitter Counter, an analytics service that provides Twitter statistics and refreshes in real-time.

2 As was the case with "The Biograph Girl," Florence Lawrence, who died in 1910, as reported in the March 12, 1910 edition of *Moving Picture World*, and a second time, in 1938.

happen only once. I want to relive it, as readers can, as viewers can, over and over. But when everyone is misapprehended—and misapprehending themselves—via a coy angle and a cloying caption, we also begin to muddy our own reflective waters, confusing other people's perceptions and expectations for us with who we are; surrounded by depictions of ourselves that have been consciously or subconsciously amended in turn until our own understanding of ourselves becomes perverted too. We are no longer able to tell the difference between the fact and the fiction, the representation or its re-presentation. Who are you? I ask, again and again.

Perception and expectation, separately, together, is the closest way we can come to understanding why we ask the question in the first place. In 1977, psychologists Theodore H. Mita, Marshall Dermer, and Jeffrey Knight tested the “mere-exposure” hypothesis in their study, “Reversed Facial Images.” Individuals will prefer a facial photograph that corresponds to their mirror image rather than to an actual picture of themselves, probably an attitude we all readily admit today. But Mita, Dermer, and Knight were also able to demonstrate *why* we find our mirror images more appealing. It has more to do with nature than science. We—and other species, too—develop a preference for a stimulus based solely on our repeated exposure to it. Exposure turns into familiarity, which develops into comfort and satisfaction. It's the reason why we're afraid of difference. It's why we prefer to invent, imagine, and re-frame our identities to correspond with similarities and semblances.

One of the reasons why the selfie is so popular—one million self-shot a day—is because it pretends to portray us at our most vulnerable; up close and between the eyes, looking at you the way we'd want to be looked at ourselves. A manufacturing of authenticity that furnishes a suggestion of intimacy. But what if we actually feel vulnerable as a result of it? The viewer, the subject. The means may have been manufactured, but if the emotion elicited is real, who cares?

It's always the social or emotional message embedded in the image or song or words or work of art that exhilarates us, not how it's produced. And as everyone knows, digital instruments, too, can result in a very physical pleasure, the way music made purely with machines can be sensuous and erotic to move to, our bodies gyrating the way nature intended—and computers permit. It's this interplay with technology that has always shaped us and continues to do so; who we are, and how we perceive ourselves within our community.

Video may or may not have killed the radio star but the radio definitely killed—or rather, reassembled — the live performance, what people asked for and what

they expected to hear. Sound was first recorded in 1878, freezing voices and capturing music, allowing it to be savored, to be studied. But the earliest recording devices couldn't accurately render certain sounds, like drums and bass. And jazz musicians in the early twentieth century who aspired to be like the artists they heard on the radio would imitate what they heard while composing their own music, perpetuating a generation of jazz bereft of many of its moving parts. The perception was contrary to the reality, just as we often think of recordings as faithful replications instead of a translation: real to reel. In actuality, recordings are as inaccurate as our own internal recording of reality, the subjective, idealized memories we preserve and revise with time and circumstance. It's the reason why we hate the sound of our voice when it's played back to us on an answering machine. Technology picks up what we hear of ourselves, *more or less*, but as a whole, we sound strange to our own ears.

And as radio became popular in the twentieth century and more songs found more audiences, voices preserved and disseminated from places we'd never heard of or been to, we became familiar with more songs, or rather, we became familiar with a certain version of more songs. As David Byrne points out in his auto-theoretical 2012 book, *How Music Works*, eventually live music, too, tried to imitate the sound of recordings, its radio replica, dumbing down the original for a recognizable counterfeit, the lie being passed around in service of some truth. We need not look to the Internet or even technology to see evidence of this in other aspects of our culture. During his celebrity research, Gamson shares a conversation with a director, who tells him — and also us — about Robin Leach's trademark *Lifestyles of the Rich and Famous* shrill voice — a product of Dan Ackroyd's impersonations of Leach on *Saturday Night Live*: "Robin got so much publicity out of it that Robin started doing Dan Ackroyd doing Robin. And now that's how he is, all the time" (Gamson, 1994, p. 77).

How we recognize ourselves, the look in our eyes, the way we smile, the tone of our voice or the tilt of our hip, the angle from which all of this is captured, has more to do with everyone else, their version of our reality playing on a loop, and us recording it to play this back. The reality of the recording supplants the reality of the real thing; it's the everyday version of the Hollywood sci-fi dystopian plot point of clones replacing their originals; artificial intelligence replacing human intellect; the truth which conceals that there is none.

We always fill in the discrepancies, the blanks, the missing sounds or missing letters, as we do with the visual gaps between video frames clicking above us in the

darkness of the cinema, or the living room. And what's left is our selves, fashioned and re-fashioned to fit someone else's idea of us, the one that replaces whatever was there originally. To be named. Oh, to be named. What a beautiful rite, the before and not knowing.

The truth is I remind you of yourself. Because you made me in your image.

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Companies like Devumi, Social Envy, and DIY-Likes.com sell Twitter followers and retweets to celebrities, businesses, and anyone else who can foot the bill, collecting millions of real dollars with fabricated users: bots that resemble real people, a new form of *social* identity theft, which is as crowd-sourced as the term suggests, cooperative and later, co-opted. As the *New York Times* reported in the early days of 2018, as many as 48 million of Twitter's reported active users, which accounts for almost 15 percent of its total base, are fake: automated accounts meant to simulate actual people. Facebook, too, has admitted to hosting up to 60 million automated accounts among its global social media empire. And although bots like the potentially several following you right now may also do more than boost your social media metrics ranking—influencing audiences, shifting political debates, obscuring news events and launching others into view as “trending topics” or “recommended content”—they are also, at present, completely legal. And why not? In an age of Post Internet capitalism, if beauty remains what is useful, what is useful is what is productive; what produces.

But today it is also necessary to acknowledge that if you aren't paying for the product, you are the product. Our browsing history is already tracked, profiled, shared and sold by online marketers. They're called data brokers (Boutin, 2016). They act as auctioneers and traders of data collected from our digital traces; all the movements we knowingly and unknowingly make. You are right now being auctioned, and you don't even know it, or how much you're worth. How much your data fetches on the market. In ancient Greece and Rome, the obligation to hold a funeral was so strict that in the absence of a body, law required a wax or wooden double to be burned in its place. Today our data doubles outlive us, without having to go through the fire. And we can be even more useful to companies in death than we ever have been in life.

But much more useful than us or our data doubles are the innumerable duplicates that have only superficially been made in our images—those fake bots that pad not

only companies like Deyumi's pockets but also social media giants like Facebook and Twitter whose market growth is tied to the number of users who appear as discoverable data, an inflation premised on the fiction of transforming a single real Twitter user into hundreds of different bots; "each," the *New York Times* reports, "a minute variation on the original" (Confessore, Dance, Harris, & Hansen, 2018, p. 3). As it has done with almost every natural human tendency, the Internet has monetized what previously existed only as wish fulfillment. We still want to play make-believe but we want to do it on our terms. In our increasingly museum-curated lives, aestheticized and anesthetized, precautions and predetermined, we want the real, minus something indefinable, so that it won't be real. Our online identities, too, bear this indelible mark of forgery — the copy so flawless it could never be original. Whatever way you cut it, we are the sum of these simulations. We are not just living through the era of fake news, but fake "people" — AI meant to mimic us in insidious or outlandish ways: the Internet's New Clothes.

Coincidentally, or not, Wilhelmina was among the several companies and celebrity figures named as a frequent purchaser of fake followers in the *New York Times* report. Nearly all of the celebrities, politicians, journalists, and brand ambassadors who responded to requests for comments in the same article readily acknowledged the "total scam" they were contributing to as a client to companies like Deyumi, yet all of them kept buying — a list of customers that includes other *New York Times* correspondents — many of them out of desperation to keep up the façade, a common emotional response, I believe, but one that is also particular to this current moment; a phenomenon that has, unlike so much else, actually been created by the Internet instead of merely magnified by it. What's one more lie in a culture of prefabricated interactions? And is it still a fib if everyone already knows *everyone is in on it*? Devumi, much like modeling and talent agencies which poach "discovered talent," doesn't even make its own product; its employees are tasked with purchasing bots wholesale from other companies who manufacture them. The legacy of the company might ultimately be realized in the coincidence of its own con job: ripped off by a copycat, a bot-selling company based in the Philippines, called DevumiBoost.

Yet there is one thing we know for certain, accountable to our own accumulating data: If you retweet a post shared by a fake account, the engagement is still real.

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When you adjust your screen we are each looking at the same passage from Edward Said's *Orientalism*, a point of departure which begs the question of what the future holds for the eradication of local tradition and myth, against Western totalization in a present that already includes so much Internet-curated cultural imperialism:

One aspect of the electronic, postmodern world is that there has been a reinforcement of the stereotypes by which the Orient is viewed. If the world has become immediately accessible to a Western citizen living in the electronic age, the Orient too has drawn nearer to him, and is now less a myth perhaps than a place criss-crossed by Western, especially American interests. (Said, 1978, pp. 26-27)

Said, speaking in 1978, seems to echo Maurice Merleau-Ponty's thoughts about the self-imposition of value brought by the gaze (Merleau-Ponty, 1968, pp. 8-10), but neither thinker had any way of knowing what our AI-enriched culture would look like, literally resemble; resembled in the image of its creators: white, mostly heteronormative males. If we continue to replace our human faculties with an artificial intelligence that can do everything for us without our asking, will we even remember that we ever had a choice? To ask, to speak.

The issue is not, I think, that there are more cameras than humans in the world. The issue is our use of them to map one another on a world stage; the voluntary submission of our faces to what's become the largest image database in the world. Surveillance, from the French *sur + veiller* to watch, from Old French *veillier*, from Latin *vigilare*, more at vigil. *Sur* which means up, over, above. But today's surveillance does not only occur "from above."

Today there are more than two billion users on Facebook, 83 million of which, in 2012, were fake (Kelly, 2012). Over 136,000 photos are uploaded every minute. We look at one another the way we'd like to be looked at, a co-operative and participatory surveillance in which nothing is asked of us except that we lend our eyes to the wholesale rendering of our bodies as data, a situation in which we are both the targets and the targeters of others, complicit with the very real violence beneath the metaphorical violence of new media, drone operators and those who inhabit only the simulation of death represented by the red dot on topographic representations of actual cities.

Today China is developing its “Social Credit System” to rate the citizenship of its nearly one and a half billion citizens, licensing eight private companies to develop systems and algorithms for China’s Citizen Scores. As the policy stated as early as 2014, in the 12th Five-Year Plan, when the design first went into effect: “It will forge a public opinion environment where keeping trust is glorious. It will strengthen sincerity in government affairs, commercial sincerity, social sincerity and the construction of judicial credibility.” The move toward security is not just a national one; it cuts across individual identity every day. And as Jacques Derrida makes clear in his “Archive Fever” (1995), if not for the threat of death, we would not have the need for archives; the compulsion to add to them. Even as I type this, even as you read this back, my phone is asking me to perform another *backup*. National interests converge with our innate sense of self, or fear of losing it, in our impulse for retrieval—and perhaps, even, the hope of reclaiming.

In July of 2017, Facebook shut down one of its AI systems after chatbots began speaking in a language of their own creation (Maney, 2017). A month later, BabyQ and XiaoBing were taken offline by state-sanctioned censors in China when both robots began bad-mouthing the Chinese Communist Party (Li & Jourdan, 2017). Both examples offer stark contrasts but also singular visions for our future. Whether we end up at the whim of artificial intelligence, or only its creators, we have already lost our own autonomy in identity formation. We have already lost the distinction between who we are, and what the world has made us into. Or what versions of us the world has silenced.

A study released in 2017 by two Stanford researchers claimed that artificial intelligence could detect a person’s sexual orientation, provoking, again, the question of employing predictive analytics for “evidence” of categories of human identity, particularly when only two categories are included, particularly when non-white persons are not. What does AI say about humanity, except that you only count if you’re white; that you only count if you’re gay or straight? Bias and discrimination have found new, more insidious avenues of proliferation through algorithms.

With no knowledge of a person and with only pixels as its source material, an algorithm can begin to detect patterns and start to reproduce representations of your face, pictures that were never actually taken, photos of yourself that never existed. Auto-complete.

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The expression “to save one’s face” comes from the Chinese phrase “tiu lien” — to suffer such a public disgrace so as to be unable to show one’s face in public; literally to *lose one’s face*. Saving face means preserving dignity. Dignity means maintenance, a balancing between a person and a model, life and the norm — conformity, the play of always being in one’s place. But today, the notion of facial recognition in China takes on another layer of performance because of the overwhelming cultural significance of the selfie. The craze for transforming lao bai xing (“just plain folks”) into wang hong lian (“Internet-celebrity face”) has turned a photo-editing app like Meitu into a cultural custom and its company, also named Meitu — “beautiful picture,” in Chinese—into the largest Internet company on the Hong Kong stock exchange despite launching less than ten years ago.

On another Meitu app called BeautyPlus, users can select a beauty level from 1 to 7 before adding a filter, including one called “personality,” an attempt to undo the fact that everyone who uses Meitu—a sample population which accounts for more than half the selfies uploaded on Chinese social media and six billion photos a month—ends up looking more, or less, and more or less the same. And it isn’t just Meitu’s progression into social media and the Chinese lexicon that has changed the face of China, it’s the fact that several users actually use the app to preview different facial structures and alterations, before they go under the knife in the real world, a move from manufacturing digital desire to materializing it in the physical. But it’s also a move from taking ownership of your body to being owned by it, turning the diversity of the human face into a preset of conformity, in which one standard of beauty dictates the literal look of an entire generation.

In *The New Yorker* article, “China’s Selfie Obsession,” one woman describes destroying every picture she can find of herself before her surgeries began. “The beauty of photos taken before the digital age,” she tells the writer, “is, if you destroy it, it’s gone for good” (Fan, 2017). Yet China’s fixation on photo recognition is a microcosm of our global obsession with being seen; with documenting the traces of today to be looked at later, and looked at whenever one wants, an intra festum adherence to the present through obsessive repetition and intentional self-surveillance. Like so much else, the Internet has ostensibly democratized fame, allowing for new experiences of the self and a new economic exchange tied to performance and appearance. If the sixteenth century allowed for a new era of the face — the widespread dissemination

of faces ushered in through copper engraving and printing technologies — today we are a global nation of AI-personalization and impersonations, a disintegration of past and future in favor of the intense “ecstasy of communication”; a Baudrillardian present which is only possible without any frame of reference. And without any context or coordinate system, culture porously slides into self-awareness, dispersing and disappearing only to re-form on new sites, new stages of play.

What is it that we want but to continue operating as simultaneous actor-and-audience, but also and especially, director? What is it that we want except to diagram the performance from a perch we can control, meticulously crafted and curated? It is worth repeating an earlier statement: *As it has done with almost every natural human tendency, the Internet has only monetized what previously existed only as wish fulfillment.* Another way of saying this is by reminding ourselves that there has always been a profound narcissism in our gaze—a narcissism and imperialism that has nothing to do with the Internet but which is inherent. And moreover, the potential for power, ultimately, surfaces in the technique itself, the process of a self-directed pleasure.

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Imagine walking out the door of your office or home; you look up from your phone to see a dozen strangers you know everything about. Facial recognition technology — like the three different companies Facebook acquired in the last six years (Face.com in 2012; Masquerade and FacioMetrics in 2016) — makes this hypothetical scenario a growing reality. Startling, if its purchase wasn't p(l)aying off our innate desire for safety, the self-surveillance we already employ every day on social media. The only difference, in an age of augmented reality, is that we'll no longer even need our phones. Public spaces will become even less diverse; people will become less comfortable with diversity. When the gaze arrests itself in algorithms, it no longer looks inward. We will also lose our capacity for nuance, cruising, the allure of the unknown. And around the corner, another corner. The uncanny valley of an intimacy that cuts off the moment we know everything: what is there left to ask of ourselves, or others? The celebration of urban anonymity which is the city will become more segregated, more compartmentalized. Less open, less fluid. Informing the anti-Muslim rhetoric behind the ban on burqas in Austria, France, Belgium, and most recently, Denmark (May 2018), is the popular idea that nobody should have their face covered in public; that turbid point of view: *if I can't see you, I should fear you.*

Any discussion of the social invisibilities engendered by and through the Internet necessarily demands further questioning as to how visibility, as an increasing cultural norm, has produced new inequalities in real life. How we see and what we see is quickly being reframed. Post Internet culture yields a database of facts about us beyond our immediate curatorial control; a future in which we no longer can manage what others can see about us; a future in which we no longer have a canvas on which to create or reclaim a persona. After the decline of anonymity, we are literally face-to-face with the abolishment of identity-performance, and its utopic potential. Living in a world of everyday facial recognition is the final stage, or break, in the dissolution of the boundaries between celebrities and us. When everyone around you knows who you are and what you do—what you did today down to the metadata—it is us who will be both celebrated and reviled, self-secure and utterly disconnected.

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Invisibility, Inequality and the Dialectics of the Real in the Digital Age

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Abstract

In the digital age, the practical possibility of engaging inequalities as political problems, that is, as problems related to the competition for the control over the distribution of values in society, is undermined by the digital invisibility of reality

In the current state of affairs, the digitalization of society reflects the influence of capitalist interpellation and brings about the invisibility of the real. The invisibility of the real through capitalist digitalization, in turn, conflates digitization and digitalization subordinating the latter to the former. Construed as a process inspired by technological rationality, capitalist digitalization undermines the possibility of mobilizing knowledge and legitimizing practices in support of the interpretation of invisibilities in relation to inequalities and injustice.

In line with the critical perspective of Andrew Feenberg and others, my approach is that the influence of capitalism in the digital age results from an epistemic appropriation of a technological development. This appropriation is the source of invisibilities that support inequalities and ultimately injustices that can and should be opposed. Leading on from this, my point is that opposition to this influence depends on the possibility of establishing alternative epistemic grounds and the formulation of alternative interpellations for the production of digital subjectivity.

To foster the normative agenda of critical theory, I discuss this possibility in terms of the 'dialectics of the real', the re-politicization of the social construction of reality in the digital age and the role of critical media literacy.

Keywords: Interpellation, digitization, digitalization, dialectics of the real, social construction of reality, capitalism

Invisibilidade, Desigualdade e Dialética do Real na Era Digital

Resumo

Na era digital, a possibilidade prática de engajar desigualdades como problemas políticos, ou seja, como problemas relacionados

com a competição pelo controle da distribuição de valores na sociedade, é prejudicada pela invisibilidade digital da realidade.

No atual estado de coisas, a digitalização da sociedade reflete a influência da interpelação capitalista e provoca a invisibilidade do real. A invisibilidade do real através da digitalização capitalista, por sua vez, confunde digitação e digitalização, subordinando esta última à primeira. Construída como um processo inspirado na racionalidade tecnológica, a digitalização capitalista compromete a possibilidade de mobilizar conhecimentos e legitimar práticas de apoio à interpretação das invisibilidades em relação a desigualdades e injustiças.

De acordo com a perspectiva crítica de Andrew Feenberg e outros, a minha abordagem é que a influência do capitalismo na era

digital resulta de uma apropriação epistêmica de um desenvolvimento tecnológico. Esta apropriação é a fonte de invisibilidades que apoiam desigualdades e, por fim, injustiças que podem e devem ser combatidas. Partindo disso, o meu ponto é que a oposição a essa influência depende da possibilidade de estabelecer fundamentos epistêmicos alternativos e da formulação de interpelações alternativas para a produção da subjetividade digital.

Para promover a agenda normativa da teoria crítica, discuto essa possibilidade em termos da ‘dialética do real’, da repolitização da construção social da realidade na era digital e do papel da literacia mediática crítica.

Palavras-chave: Interpelação, digitação, digitalização, dialética do real, construção social da realidade, capitalismo

INTRODUCTION

The main point of this paper is that the capitalist appropriation of digital affordances produces invisibilities, and in particular the ‘invisibility of the real’, whose fundamental effect is to preserve the hegemony of capitalism in the present and to project it into the future. In order to resist this hegemony and re-appropriate the emancipative potential of digital technology, it is important to re-establish the visibility of the real and the political dimension of the social construction of the real. In other words, we need to restore the possibility of thinking about technological development, relations of power, social change and the future outside the influence of capitalist ideology.

My starting point is that communication, visibility and inequalities are connected and that every form of communication reveals something and hides something else. This connection thus establishes different patterns of the visibility and invisibility of equalities and inequalities: different codes, rules, routines, conventions, practices that

ultimately determine which difference is relevant and which is not, which one can or cannot be ignored.

The concept of (in)visibility here is taken in its broader meaning or semantic connotation, which includes the ideas of attention or prominence and of awareness or knowledge.

The concept of inequality combines ‘difference’ with ‘power’ or, more precisely, the distribution of differences with the distribution (or hierarchy) of power. The association between inequalities and injustice is based on implicit ideas concerning the distribution of differences, the distribution of power and the (il)legitimacy of the association between the two.

These definitions/distinctions are important because in every society only some differences have the social significance of inequalities and only some inequalities are construed as injustice. What differences are treated as injustice and how ultimately depends on ideological interpellation. This notion was originally coined by Louis Althusser to discuss how capitalist ideology manipulates people into compliance with what is ultimately a system of production based on exploitation. For Althusser, ideology works by interpellating individuals as subjects (1971/2008, pp. 44-51) and the subjects so constituted by ideological interpellation make ideology possible. This process of ‘double constitution’ may seem quite implausible and difficult to understand unless one considers that, according to Althusser:

Ideology is a ‘representation’ of the imaginary relationship of individuals to their real conditions of existence (p. 36) (My italic).

For our discussion, this interpretation of ideology and interpellation has at least two implications, on analytical and epistemic grounds. First, the role of communication technology in society is subordinated to that of ideology and of the ideological role of other institutions in society. In a critical perspective, it is important to point out that patterns of (in)visibility and (in)equality are not ‘caused’ by some intrinsic qualities of communication technology. As Andrew Feenberg convincingly argues in his description of a critical theory of technology, technology alone is not responsible for the effects of technology on the distribution of power or inequalities in society. According to Feenberg,

technologies are not separate from society but are adapted to specific social and political systems. Technologies are thus not neutral tools, because they are implicated in the socio-political order they serve and contribute to shaping, nor

can they be characterized by a singular “essence of technology” because they evolve historically along with other aspects of society. Just as institutions, laws and customs can be changed by human action, so can technological systems. (Feenberg, 2009, p. 146)

If the socio-political order served by the information revolution and digitalization is that of Western, post-industrial, ‘mature’ or global capitalism, as has been argued at least since the 1980s (Schiller, 1980; Inayatullah, 1998), the question to ask is then not what does digital technology do but how does *capitalist technological discourse* legitimizes patterns of (in)visibility and (in)equality that contribute to the legitimization of capitalist socio-political order (Fisher, 2010): what is revealed, what is hidden, and how invisibilities relate to injustice?

Second, since ‘ideology represents the imaginary relationship of individuals to their real conditions of existence’ (Althusser, 1971/2008, p. 36), the role of communication technology becomes crucial: well beyond the mere communication of information and, more fundamentally, in the production of the (ideological) representation of reality. In this perspective, one can appreciate the distinctive feature of the digital age. As I argue in the rest of this paper, the patterns of (in)visibility, (in)equality and (in)justice associated with the digital age are unique to the extent that they involve what I summarize as ‘the invisibility of the real’.

DIGITAL INVISIBILITIES

Patterns of (in)visibility and (in)equalities can be described in relation to at least three main dimensions: the individual, social and epistemic dimensions. To anticipate the main points of my argument, the distinctive, and in some respects more disturbing, aspects of the digital age pertain to the epistemic dimension, or the ‘invisibility of the real’. This aspect, which concerns the possibility and accessibility of shared truths, has crucial political implications: the invisibility of the real dissolves the possibility of linking inequality with injustice, preserving both but undermining collective action against the conditions through which the former produces the latter. To address this problem, in the concluding section I describe an epistemic standpoint I call ‘the dialectics of the real’. Before that, however, I discuss ‘digital invisibilities’ from the individual, social and epistemic dimensions.

The individual dimension

Quite intuitively, the digital age makes invisible those people who do not have access to digital technology or who have access to it but not the material and immaterial resources (e.g. skills, time, money, etc.) to compete for visibility with the new digital elites (van DijK, 2012). The relevant debate here is the one about the ‘digital divide’ and relevant inequalities associated with this divide (see e.g. (Rooksby & Weckert, 2007)).

Perhaps less intuitively, however, the digital age is associated with important invisibilities in the production of subjectivity: a process increasingly dependent on a technological infrastructure almost completely owned by corporations and instrumental to their interests. The mediated production of subjectivity reveals the influence of the social in the constitution of the self but hides the role of corporate ideology and norms in the process.

Discussing the alleged affordances of digital technology in enabling the formation of subjectivities, for example, Rob Cover (2016) argues that the nature or direction of these affordances is fundamentally influenced by ‘the encroachment of a neoliberal commodification of digital activities’ (p. xix). As a result,

the contemporary subject of digital media may be one who is engaged forcefully in interactive behavior, innovative creativity, sharing, and participation, but the basic requirement to participate is to be a subject who conforms vehemently to an individualized stylization of performativity. (p. 264)

In his research on social media, Christian Fuchs has exposed ‘the double logic of commodification and ideology that shapes corporate social media’ which, behind the ‘social’, hides ‘capital accumulation... based on user data commodification, the unpaid labour of Internet users, targeted advertising and economic surveillance’ (Fuchs, 2014, p. 342).

Discussing the role of digital technology in the key domain of education, Karen A. Ferneding argues that technocentric discourse in education technology supports the influence of neoliberalism in education while marginalizing issues of social justice and alternative visions of social order (Ferneding, 2003).

In the conditions of the digital age, therefore, the production of subjectivities through mediated communication, e.g. in education, social media, etc. depends on a preliminary and necessary compliance with rules ultimately established to serve corporate interests and ideology.

The relevant invisibility here is not that of people or inequalities but the invisibility of the influence of the digital infrastructure and ideological interpellation in the formation of (digital) subjectivities. What remains hidden here is the fundamental fact that the social production of the self in the digital age is influenced by a communicative infrastructure that interpellates its users as ideological subjects (e.g. ‘prosumers’) and, to recall Althusser, reproduces capitalism as the dominant ‘representation of the imaginary relationship of individuals to their real conditions of existence’ (supra).

This representation is obviously manipulative since, for example, it formally endorses the centrality of the individual and the production of autonomous subjectivities but hides the conformist influences of digital socialization and detrimental effects such as digital addiction, isolation, etc. especially among younger generations. Similarly, while it establishes the hybrid social character of the ‘prosumer’, it hides the decline of the citizen.

The social dimension

From the perspective of interpellation, the most interesting aspect of digitalization is the intrinsic ambivalence of the patterns of social visibility and invisibility. In the digital age, the communicative production of the social is a process that feeds very opposite representations of the ‘imaginary relationship between the individual and its conditions of existence’.

On the one hand, the emphasis on information, information flows and the network support the ‘computopia’ (Masuda, 1981) of the ‘information society’, a state of affairs characterized, among other things, by ‘freedom of decisions’ and ‘equality of opportunities’, and, more broadly, one in which class differences, inequalities, struggle and exploitation have disappeared as a result of mere technological progress. On the other hand, the same technological infrastructure generates phenomena such as ‘filter bubbles’ (Pariser, 2011) and ‘eco chambers’ (Flaxman, et al., 2016) whose function is to give expression to voices of more or less radical dissent against the socio-political order served by the digital utopia.

The remarkable aspect is that *the repression of social conflict feeds the radicalization but also the digital isolation of dissidence* in a vicious circle that ultimately disrupts the social production of the social.

The disruptive potential of this ambivalence in the production of the social is not a recent discovery. Since the early stage of the information revolution, for example, scholars have warned against the risk of the emphasis on information and its delivery side-lining or neglecting issues of equitable distribution of the benefits associated with the development of information systems (Machlup, 1962; Machlup, 1980-84).

Early critics of the information society expressed their scepticism and argued that capitalist interests are bound to prevail because the political economy of the information society was, and still is, in corporate hands (Schiller, 1981) and fundamentally subservient to corporate ideology (Shiller, 1999).

More recently, and following Roland Barthes (Barthes, 1957/2000), Vincent Mosco, argued that the myth of cyberspace is a form of 'depoliticized speech' that can 'purify social relations by eliminating the tensions and conflicts that animate the political life of a community' (Mosco, 2004, p. 31). In particular, the myth of the Information Age denies history and 'transcends politics because it makes power available to everyone and in great abundance. The defining characteristic of politics, the struggle over the scarce resource of power, is eliminated. In this respect, myths create a new history, a new time, by denying history (Mosco, 2004, p. 35).

Discussing the risks related to the current stage in the evolution of the information society, Alistair S. Duff (2012) argues that it is necessary to acknowledge and to address 'the normative crisis of the information society' (p. 7) and to raise the problem of 'information inequality's significance' (p. 14).

For the purposes of our discussion, the contributions of these and other authors give grounds to the idea that the patterns of visibility and invisibility related to the production of the real in the digital age have fundamentally ambivalent effects. While enforcing representations of the social imaginary that support the computational utopia on the one hand, they incite or feed the radicalization but also the isolation of dissidence on the other.

On more political grounds, this state of affairs has at least two implications worth mentioning. First, the social produced by this pattern of visibility/invisibility is an ambivalent creature: the routine announcement of 'revolutionary' change, hides continuity in the structure of power and inequalities; the celebration of ICT democratic potential is an incitation to forget the fact that technology alone cannot change relations of power (Lyon, 1986); the emphasis on digital 'enabling potential' hides growing socio-economic inequalities, the growing role and influence of surveillance and the erosion of individual privacy by both state and corporate actors (Allmer, 2015) (Fuchs, 2014). In

other words, this is a social in which the focus on the ‘power’ of connectivity marginalizes formidable problems concerning the grounds of legitimation of this power, hence blurring the distinction between its legitimate and illegitimate uses.

Second, these ambivalent patterns of visibility/invisibility in the digital production of the social, have implications for social change. For all practical purposes, this ambivalence protects the capitalist social order from dissidence but undermines the legitimization of democratic political regimes by facilitating the repression and isolation of dissidence in forms and content (organizations, rhetorics, propaganda, activism, protest, etc.) too often incompatible with the form and content of democratic politics. In other words, online activism does not undermine capitalist interpellation, but seems an excellent breeding ground for radical ideas and movements excluded from more traditional institutions (media, parliaments, political parties, etc.) of democratic regimes.

It is important to keep in mind that these patterns of visibility/invisibility, and the disruptive communicative effects on the democratic regimes, are not intrinsic to ICT but result from the process of interpellation I described above: the specific ‘representation of the imaginary relationship of individuals to their real conditions of existence’ associated with ‘the free market’ utopia.

The most distinctive of the invisibilities of the digital age, however, is the ‘invisibility of the real’.

The epistemic dimension: the invisibility of the real

In philosophical discourse, the ‘real’ describes what is true, authentic and which, therefore, constitutes ‘reality’ as the ground for the possibility of truth, knowledge and justice, communication and organized, collective action. If we take visibility to mean attention or prominence, awareness or knowledge, to argue for the invisibility of real in the digital age means to suggest that some identifiable set of conditions commonly referred to as the ‘digital age’ contributes to make this common ground both less *accessible* and less *relevant*.

Here I would like to suggest that this ‘invisibility of the real’ is the outcome of an ideological appropriation of the two fundamental ‘turns’ I have discussed more at length elsewhere: the epistemic turn of social constructionism in the 1960s and the ‘digital turn’ in ICT at around the turn of the millennium (Stocchetti, 2017).

The ideological appropriation of an epistemic formulation is in essence a hermeneutic process by which the purposes of the formulation are separated from its conceptual tools and substituted with other purposes. This possibility exists because, put simply, despite the fact that truth and justice are values equally relevant in epistemic practices, the ways in which we learn what is true or false are different from the ways in which we establish what is right or wrong. The appropriation of the constructivist ‘turn’ by capitalist ideology was motivated by the fact that the new epistemic brought about the politicization of the real, and the ensuing consideration that, if reality was socially constructed especially through communicative practices, the control of reality was a possibility based on the control of these practices (Stocchetti, 2017). In other words, the emancipative purposes inspiring the idea that ‘reality is what we make of it’ were substituted with the purpose of preserving capitalism by ‘making reality what we need of it’.

The ideological appropriation of the affordances of the ‘digital turn’ was brought about through the conceptual confusion between the double process of digitization and digitalization, and by the subordination of the latter to the former. *Digitization* is a process of representation through binary codification and de-codification of the sensorial aspects of the social world. *Digitalization* is the process describing the social changes associated with digitization. But while digitization is a process associated with and in relevant measure controlled by the social forces involved in technological development, digitalization is a process of social change involving a wider range of forces, interests, values, visions, etc. Most importantly, digitalization involves normative questions (Duff, 2012).

Thus, the ideological appropriation of the ‘digital turn’ occurred through the confusion between these two processes and the subversion of the relation between them: putting the development of digital tool, or digitization, before the development of (digital) ends, or digitalization. Once *digitization* (a technological or instrumental process) is confused with *digitalization* (a social process), and the latter is subordinated to the former, the process of social change is confined within the narrow terms of technocentrism and, ultimately, inscribed within the ideological project of neoliberal globalization.

For all its simplicity, the slogan ‘the virtual is the new real’ effectively expresses the basic idea that the source of social change has moved from the ‘old’ to the ‘new’ real: from the domain of politics and the competition for the control over the distribution of values in society, to the domain of technological development, network management and digital surveillance. This slogan and its broad popular acceptance

are perhaps the most convincing evidence that the apprehensions voiced by at least three generations of critical scholars, from Herbert Marcuse to Jean Baudrillard and Andrew Feenberg, are not unfounded.

DIGITIZATION AND ITS SUBVERSION: THE POLITICS OF THE REAL

The invisibility of the real is an epistemic move with political consequences. It is a move made possible by epistemic and technological innovations and by the relative positioning of social forces in condition to take advantage of them while others could not.

The idea that reality is socially constructed establishes reality as a stake in a political competition. To the extent that the construction of reality depends on communicative practices, it also makes the control of communication technology a strategic resource.

As James Carey noted:

Reality is, above all, a scarce resource. Like any scarce resource it is there to be struggled over, allocated to various purposes and projects, endowed with given meanings and potential, spent and conserved, rationalized and distributed. The fundamental form of power is the power to define, allocate, and display this resource. Once the blank canvas of the world is portrayed and featured, it is also pre-empted and restricted. Therefore, the site where artists paint, writers write, speakers speak, film makers film, broadcasters broadcast is simultaneously the site of social conflict over the real. It is not a conflict over ideas as disembodied forces. It is not a conflict over technology. It is not a conflict over social relations. It is a conflict over the simultaneous codetermination of ideas, technique, and social relations. It is above all a conflict not over the effects of communication but of the acts and practices that are themselves the effects. (Carey, 1988, p. 87)

In this competition, the digital infrastructure is a formidable resource for those who can control it. It not only increases the speed and quantity of information about reality but, in order to do so, it requires and fosters the transformation of reality itself. The digitization of reality does not merely represent reality: it creates a new

reality that, by definition, is completely under the control of its infrastructure. In this new reality, the production of knowledge combines with the legitimization of power through what Jean-François Lyotard called ‘performativity’ or ‘the best possible input/output equation’ (Lyotard, 1979/1982, p. 48) and facilitates the achievement of goals by making them ‘invisible’ or beyond the reach of critical evaluation.

Because *digitization* is so effectively instrumental, *digitalization*, or the adaptation of the social world (practices, institutions, relationships, etc.) to the requirements of digitization, seems inevitable. This inevitability is expressed by a variety of slogans that, while reflecting, promoting and rejuvenating technological myths, are endorsed with the socio-political influence of actors that more or less consciously seek to gain control of the communicative construction of reality.

The invisibilities associated with this move support new structures of inequalities, illegitimate distribution of power and, therefore, injustice. From a critical perspective, however, the fundamental task is not to list these invisibilities but to look deeper into the invisibility of the real: to understand the nature of this process, the conditions that make it possible, the possible implications in terms of power and legitimacy, the nature of the risks, challenges and opportunities associated with them and, in line with the normative ambitions of critical theory, to delineate plausible interventions to resist oppressive consequences and support the opportunities for emancipation.

Once the social world is re-constructed within a reality fully inscribed within the instrumental logic of digitization, rejection of digital technology is not an option. This is so not only because technological innovations, once they exit the laboratory and blend with society, become a constitutive part of society itself. As the critical theory of technology illustrates, technology is neither neutral nor equipped with ideological preferences on its own. The problem does not reside primarily in the tools or technology per se, but in the influence of the capitalist ideology that makes efficiency a paramount value and discounts, neglects and excludes the social costs of capitalist development and, most dramatically, the possibility that the future of society may perhaps be inspired by visions other than the free-market utopia (Polanyi, 1944/2001), p. 3).

An alternative strategy is that suggested by Andrew Feenberg which he describes in terms of ‘subversive rationalization’ (Feenberg, 1992):

Constructivist and hermeneutic approaches to technology show that modern societies are inherently available for a different type of development in a different cultural framework. It is possible that, in the future, those who today are

subordinated to technology's rhythms and demands will be able to control it and to determine its evolution. I call the process of creating such a society 'subversive rationalization' because it requires technological advances that can only be made in opposition to the dominant hegemony. (Feenberg, 1992, p. 301)

Echoing the apprehension of the Frankfurt scholars (Horkheimer & Adorno, 1969/2002; Horkheimer, 1947/2004; Marcuse, 1941/1998; Marcuse, 1964/2002), Feenberg exposes the beliefs 'that technical necessity dictates the path of development, and that the pursuit of efficiency provides a basis for identifying that path' as false beliefs or 'ideologies employed to justify restrictions on opportunities to participate in the institutions of industrial society'. Conversely, he believes that 'we can achieve a new type of technological society which can support a broader range of values. Democracy is one of the chief values a redesigned industrialism could better serve' (Feenberg, 1992, p. 318).

The problem, however, is that even wrong beliefs can be influential and produce consequences affecting the competition for the control of the construction of reality. Discussing knowledge and temporality, for example, Robert Hassan (2003) argued that in the digital age, the time of the network has substituted real time with the consequences of subordinating reflexive and evaluative knowledge to the 'instrumentalized knowledge' of the 'competitive market environment' (p. 238). The regime of the 'time of the network' is established by 'the nexus between neoliberal globalization and the ICT revolution' (p. 239).

[D]igital structures permeate the economy, culture and society to a degree that is historically unsurpassed, creating in the process a distinct 'information ecology'. (...) In this accelerated ecology, the creation and application of reflexive knowledge and reflexive evaluation becomes increasingly difficult. There is simply less time for it – and less perceived *need* for it in an increasingly competitive and profit-driven social-economic system. (...) When people are 'the weakest link' in this chrono-digital ecology of our own making, then one of the central ironies of the information age becomes apparent. In the name of 'efficiency', neoliberalism has abrogated social control to both 'market forces' and computer networks of automation. Even those 'in control', those in the boardrooms and cabinet offices of the great and powerful are essentially 'out of control' as their 'timeframes for action' are set in the present or the near future,

with the consequences of their actions (...) spiraling out into an unknown eternity. We have less time to think about the future because a 'competitive market environment' compels us to think 'fast' and apply instrumentalized knowledge to the here and now. (Hassan, 2003, pp. 237-238)

In this interpretation, the digital manipulation of time affects not only the 'speed' of people's life but also the production of knowledge, prioritizing instrumental or performative knowledge over evaluative, reflexive or critical knowledge. The subordination of real time to the time of the network is associated with the subordination of knowledge to the needs of the 'information ecology' that generates and supports the network.

Questioning the role of technology, however, Feenberg claimed that democracy has 'not been extended to technically mediated domains of social life despite a century of struggle' not because 'technology excludes democracy' but 'because it has been used to block it' (Feenberg, 1992, p. 320). But if technology has been used to block democracy, how can we 'redesign industrialism' so that the same technology can serve democracy? The idea of a 'redesigned industrialism' that could serve democracy describes a desirable goal but falls short of suggesting suitable means or ways to get there.

As I have suggested here, digital technology could 'block democracy' because influential forces managed to take advantage of its epistemic affordances to nullify 'a century of struggle' and take control of the communicative construction of reality.

In this perspective, the invisibility of the real is a problem with an epistemic dimension that requires an epistemic solution: one that would allow the supporters of democracy to engage their enemy in the new reality. What is needed, in other words, is a conceptualization of the real that helps in addressing not only the invisibilities of the digital age but also the ideological roots of these invisibilities. Interpellation is one of the concepts I suggest could be usefully part of a critical framework and, with it, the idea that the mainstream uses of technology, e.g. in the production of subjectivities or in the re-production of society, interpellate subjects in forms that 'make ideology possible': that actualize the neoliberal project into daily communicative practices.

A more radical proposal involves re-conceptualizing the social construction of reality in terms of a process with competitive and cooperative aspects or, more technically, in terms of the dialectics of the real.

THE RE-POLITICIZATION OF THE DIGITAL AGE AND THE DIALECTICS OF THE REAL

As I argued in the beginning, in order for inequalities to be interpreted as injustice, it is necessary to think of difference in relation to the distribution and legitimation of power. Inequalities conceived independently from power and legitimation are merely differences. The problem with the double process of digitization/digitalization resides precisely in this decoupling.

The invisibility of reality can be interpreted in epistemic terms as a condition in which the possibility of common ground in support of truth claims is both less accessible and less relevant. This epistemic condition has political consequences: consequences that affect the competition for the control over the distribution of values in society. The fundamental aspect of these consequences is that the invisibility of the real supports the hegemonic structure of power by avoiding the problematization of inequalities in terms of knowledge and relations of power. In other words, the invisibility of the real inhibits the politicization of inequalities, that is, the problematization of differences in terms of its relation with (il)legitimate power.

From a critical perspective, the intellectual response to this condition requires an alternative engagement with reality or, more precisely, with the epistemic foundations of this notion.

Reality is the ground on which truth claims of some sort are possible. Without the possibility of truth, political behaviour is deprived of its moral dimension and communication is reduced to what Jürgen Habermas called 'strategic communication'. The role of reality undergoes a fundamental change: from common ground for the articulation of truth claims in support of moral claims and the legitimization of political action, to the self-legitimizing outcome of a form of communication in which the only goal is not the construction of truth but the augmentation of power. This is what Jean-François Lyotard called 'performativity' (Lyotard, 1979/1982, p. 48).

The patterns of visibility/invisibility associated with the individual, social and epistemic dimensions of the digital age support patterns of inequality that are construed as differences rather than injustices because they are legitimized by the double process of digitization/digitalization and by the ideological interpellation of the subjects and the relations that constitute them.

The construction of subjectivities in a digital environment under corporate control, for example, supports a fundamental informational imbalance between the in-

dividual on the one hand, and the state and the corporation on the other. The ‘information society’ that emerges from this imbalance is a two-strata society in which the power of digital elites over the digital masses is legitimized not in relation to the uses of this power, its social goals and effects, but in relation to an unquestioned and seemingly inevitable digital future and market economy. The slogan ‘program or be programmed’ (Rushkoff, 2010) expresses, perhaps provocatively, the idea of a radical polarization of political power, but it also points to its main source of legitimization: the control over digitization.

Thus, the main implication of the invisibility of the real is the *political invisibility of structural injustice*: the decline in accessibility and relevance of the conditions and tensions through which the production of knowledge legitimizes differences while hiding illegitimate inequalities.

In this perspective, the possibility of resistance to the ideological invisibility of structural injustice in the digital age does not reside in the rejection of the digital but in the preliminary re-constitution of the real or, more precisely, of its epistemological grounds, so to make these conditions and tensions in the production of knowledge and legitimation newly relevant and accessible. In practice, we need a formulation of the relationship between knowledge, truth and power capable of antagonizing the influence of capitalist interpellation in the digital age (Stocchetti, 2017).

In the technological discourse of capitalist interpellation, the construction of reality is no longer a social or political process but a techno-administrative one. The digital age, in its current stage, rather than the ‘global village’, seems more likely to bring about global surveillance. This outcome, however, is far from inevitable and there is at least discursive evidence that the legitimization of this transformation is problematic. The slogan, ‘the virtual is the new real’, for example, is an ideological incitation similar to that ‘the king is dead, long live the king!’. It seeks legitimization through continuity: the legitimization of the ‘new real’ by representing the transition from the ‘old real’ as a natural transition. Like all ideological slogans, also this one hides its ideological function: the legitimation of the virtual as the new real since, in fact, the ‘virtual’ is not the ‘real’. It also hides the fact that this transition is far from a ‘natural’ process but very much a political one: a process in which material and immaterial resources are used by identifiable actors in the competition for control of the social construction of reality.

If, as Feenberg suggested, we need to redirect the role of technology from blocking democracy to supporting it, we need a ground to resist the effects of capital-

ist interpellation in the digital age. We need to re-deploy the construction of reality on epistemological grounds in ways that can help the recovery of the emancipative potential of the idea that 'reality is what we make of it'. A proper discussion of the epistemological features of such grounds would require an engagement with critical realism and social constructionism that is not possible here. Within the limits of this paper, I will thus confine myself to the problem of digital invisibilities and the influence of capitalist interpellation on the social production of reality in the digital age.

The main idea of this approach is that what we usually call reality is an impermanent result of a complex and multidimensional process through which people, groups and institutions manage to give a temporary solution to opposing tensions. This process contains competitive and non-competitive aspects and is based on communicative and non-communicative practices. The same process, however, has a political dimension to the extent that the specific solutions to opposing tensions have implications for the competition for control of the distribution of values in society or, as Harold D. Lasswell puts it, the question of 'who gets what, when and how' (Lasswell, 1936/1950).

The awareness that the construction of reality is a dialectical process with a political dimension and political consequences is the first step for the re-politicization of the real. This process stands, so to say, on two legs: first, the rejection of capitalist interpellation and influence on the digitalization of society; and, second, the production of ideological formulations capable of expressing alternative technological interpellation in support of more emancipative representations of the 'imaginary relationship of individuals to their real conditions of existence'.

The idea that reality is the impermanent result of dialectical tensions has two implications. First, it makes visible the influence of non-hegemonic social forces and ideologies, thus opening the possibility of political mobilization and anti-hegemonic coalition at both levels of policies and politics. Second, it performs descriptive and prescriptive functions: it tells something about how this process works and what its participants should keep in mind if they want to be influential. Behind this idea and these two implications is the fact that the social construction of reality does not take place in a vacuum but in a social environment populated by a rich variety of relations, ideas, visions, histories, hidden and overt conflicts, regularities, paradoxes, etc. The interpretation of reality as the result of a linear or even incremental process performed by 'structures' in a politically or ideologically neutral environment (e.g. the digital environment) is itself an ideological artefact to hide, naturalize and legitimize the influence of a hegemonic ideology in the social construction of reality.

The dialectics of the real involve a complex interplay of the material and immaterial dimensions. One important step to counter the influence of capitalist digitalization is to re-evaluate the material dimension of political power and to consider the possibility that ideological manipulation may be accountable for overrating the subversive potential of the digital. As I argued elsewhere, in relation to the role of digital visibility (Stocchetti, 2014), the effective exercise of political power requires solid connections to the material dimension of political struggle. More generally, the emphasis on the 'subversive potential' of digital communication may make people forget that the legal systems of democratic regimes still offer powerful tools to address and inhibit the transformation of (digital) invisibility into (digital) inequality and (digital) injustice. The approach of critical political economy of the media (Hardy, 2014) is most useful to engage with the material grounds of capitalist interpellation of digitalization and the possibility of reducing corporate control of the digital infrastructure. We should however keep in mind that the legal system and political economy are also arenas of political struggle: places of institutional confrontation between social forces associated with or antagonistic of the capitalist control of digitalization. The role of the institutional dimensions and of institutions as both tools or resources and arenas of political struggle is also an influential dimension of the dialectics of the real whose importance should not be overshadowed, for example, by the alleged influence of online activism.

The political relevance of online activism, and its limits, are defined by the extent this form of communication can (or cannot!) influence and support or undermine the possibility of successful redistribution of power in society. The digitalization of political activism both aggregates and isolates political dissidence, creating communicative micro-cosmos in the form of echo-chambers or filter-bubbles with problematic effects on the capacity of democratic regimes to handle social change. These micro-cosmos facilitate the survival of groups and political movements too radical to get enough acknowledgment offline, and are instrumental to the control of resources that may eventually support activism offline. The construction of an ideological and more democratic alternative to the capitalist digital interpellation requires a critical reflection on the relative advantages and disadvantages of digital activism. To the extent that democracy flourishes on the confrontation of different opinions, for example, it is important to understand if and when the internet can facilitate or hamper democratic communication and the formation of democratic

subjectivities (see e.g., Dahlberg, 2011). Taking this argument further, we may even question the suitability of online activism where the goals are to foster awareness of the detrimental effects of digital isolation on democratic politics.

SUBVERSIVE RATIONALIZATION AND CRITICAL MEDIA LITERACY

The points I have discussed in this paper are compatible with and inspired by, among other sources, Feenberg's idea that 'the dominant model of industrial society is politically contingent', and by his appeal to 'subversive rationalization' (Feenberg, 1992, p. 301). In this concluding section, I would like to go one step further and suggest how professional educators may contribute to 'subversive rationalization' in media education.

The capitalist appropriation of the 'digital turn' in education, far from being a 'revolution', consists mostly of a change in which educational and pedagogical content and relations are re-inscribed within the limits or 'affordances' of new technologies and, what is most disturbing, of an inescapable 'digital future'. Digital capitalism seeks to preserve itself by taking root in education, by establishing a 'digital pedagogy' that could form individuals compliant with the invisibilities of the digital age and the injustices associated with it, in the same ways as we are accustomed to the differences and injustices that the natural world and luck, or lack of thereof, impose on us. In the past decade or so, these efforts have been met with growing resistance, and the increasing influence of critical studies in education, pedagogy and technology testify that the efforts to preserve the grip on capitalist interpellation on technological development are met with resistance.

If reality is construed as an impermanent outcome of dialectical tensions, we need to appreciate the ideological and socio-political role of education. This role cannot be overestimated, and the influence of capitalist interpellation on the digitalization of education reveals the fundamental importance of this institution in the re-production of reality. The idea that reality is the result of the temporary resolution of dialectical tensions may support a critical epistemology but remains quite sterile on ideological grounds if democratic education fails to give people the means and the will to participate in the construction of reality, that is, to reclaim the sovereignty expropriated by the capitalist interpellation. Put simply, we need individuals who are able to take advantage of whatever opportunities these critical epistemological

grounds may offer in support of the re-politicization of the real. How to form this kind of individuals is a problem that has to do with pedagogy, or the formation of individuals, more than with education and professional training, if these two activities are interpreted in the restrictive terms of the transmission of competences. It is not only a matter of what kind of competences or 'knowledge' are required in the digital age, but of the ideals or 'ethics' associated with its present and future. In this perspective, as I argued elsewhere (Stocchetti, 2017a), the effective challenge to the capitalist appropriation of digital technology requires the formation of individuals or *personae* willing and able to engage in the social construction of reality as a dialectical process and in support of emancipative values.

The introduction of media literacy in media education curricula falls dramatically short of this goal. What is needed, instead, is a more radical approach to media education that I would like to refer to here as critical media literacy.

Media literacy is obviously not enough if this notion is interpreted as the mere acquisition of competences that are supposedly necessary for the participation of the individual in the media and information order of digital capitalism. Learning to use digital media is important and it appears as difficult today as learning to read and write must have appeared difficult to most in the 16th century. That alone, however, is not enough because the formation of digital subjectivities combines with capitalist interpellation and, given ideological control of technological development, the process of socialization in the digital age participates in the socialization of the capitalist social order. If the goal is to challenge the capitalist appropriation of technological development and oppose the injustices associated with it, media education should engage with ideological interpellation and the legitimization of power relations.

Unfortunately, even in most authoritative and perhaps influential expressions as, for example, the draft version of the Paris Declaration on Media and Information Literacy in the Digital Age¹, media literacy is construed as the acquisition of competence that, while inspired by laudable values, seems to ignore actual power relations (e.g. corporate power) and the possibility of futures radically different from the present.

Critical media literacy is the term for an approach to media education that is in many respects still a work in progress and, although useful formulations are available (e.g., Kellner & Share, 2007; Hammer, 2011; Mason, 2016; Nam, 2010), is still underdeveloped.

Media literacy puts the emphasis on the capacity to use available technology but

1 http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/news/paris_mil_declaration.pdf

do not problematizes the ideological dimension and the legitimation of relations of power. In this approach, 'critical' competence is a generic capacity to have an opinion and make rational choices. In critical media literacy instead, the core competence is to identify the nature of the forces that seek to influence our choices and the grounds on which these forces justify their influence. Inherent in this notion is the idea that, in order to bring about the 'subversion' sought by Feenberg, media education, and perhaps formal education in general, can be usefully inspired by the critical pedagogy of Paulo Freire and others.

A core goal of this pedagogy is critical consciousness, and the possibility to enable learners to identify relations of power and to assess their legitimacy, or the grounds of their justification (Freire, 1974/2013; Freire, 1998/2001). Applied to critical media literacy, this goal consists in the capacity to engage with media in problematizing the role of ideological interpellation, digital technology and the media themselves within the broader context of the social construction of reality and the tensions I have here discussed in the terms of the dialectics of the real.

More precisely, the capacity to assess the nature of power relations, the grounds for their legitimacy, is a pre-requisite to the choice of compliance or resistance, which are in essence moral choices. In relation to the invisibilities of the digital age, critical media literacy consists in the acquisition of the capacity to identify and assess the nature and especially the legitimacy of the power relations associated with the digitalization of society. This competence is key to recognizing invisibilities and to distinguishing those that are constitutive of injustice from those who merely represent difference. From this perspective, the critical theory of technology is an important element in the formation of the critical media literacy curriculum, especially for educators. In other words, where media literacy is inspired by a pedagogical model that seeks individual 'adaptation', critical media literacy pursue the ideal of 'integration'. The difference, as Freire put it, is crucial:

Integration with one's context, as distinguished from *adaptation*, is a distinctively human activity. Integration results from the capacity to adapt oneself to reality plus the critical capacity to make choices and to transform reality. To the extent that man loses his ability to make choices and is subjected to the choices of others, to the extent that his decisions are no longer his own because they result from external prescriptions, he is no longer integrated. Rather, he has adapted. He has "adjusted". Unpliant men, with a revolutionary spirit, are often

termed “maladjusted”. The integrated person is person as *Subject*. In contrast, the adaptive person is person as *object*, adaptation representing at most a weak form of self-defence. If man is incapable of changing reality, he adjusts himself instead. Adaptation is behaviour characteristic of the animal sphere; exhibited by man, it is symptomatic of his dehumanization. Throughout history men have attempted to overcome the factors which make them accommodate or adjust, in a struggle – constantly threatened by suppression – to attain their full humanity. (Freire, 1974/2013, p. 4) (*Italics in the original*)

Thus, the re-politicization of the social construction of reality requires that formal education provides critical media literacy, instead of mere media literacy, because the problem is not merely one of learning to use the digital media but of subverting the illegitimate relations of power that capitalist digitalization seeks to hide and naturalize. Actual emancipation requires individuals to effectively engage and oppose the influence of capitalist interpellation on digital technology – in other words, refusing to be ‘prosumers’ and instead enforcing their rights as citizens.

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Digital Inequality in Theory and Practice: Old and New Divides in the Broadband Era

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Abstract

As of 2017, the number of ICT users worldwide reached 4 billion people – it was only 16 million in 1995. According to its early observers, the World Wide Web could effectively tackle socio-economic inequalities, promoting the diffusion of information and opportunities on the four corners of the globe. However, despite the expectations, “digital dividends” arising from new technologies have been distributed unevenly, missing the point of a dramatic, wide-spread emancipatory impetus. Furthermore, as the advantaged tend to seize resources and skills

needed for benefitting from the ICTs, the deprived could be further “driven out” from the broadband revolution. Building on these concerns, the aim of the paper is that of reviewing the “state of the art” of the digital inequality debate, shedding light on five main accounts: 1. The adaptive definition of “digital divide”; 2. Methodological approaches; 3. Interaction with other forms of inequalities (socio-economic status, education, race, gender, age); 4. Global dimension and “digital peripheries”; 5. The intrinsically political issue of “connective action”.

Keywords: Inequality, divide, capital, Internet, broadband

Desigualdade Digital na Teoria e Prática: Antigas e Novas Divisões na Era da Banda Larga

Sumário

Resumo: Em 2017, o número de usuários de TIC no mundo atingiu os 4 mil milhões de pessoas - eram apenas 16 milhões em 1995. De acordo com seus primeiros observadores, a World Wide Web poderia efetivamente combater as desigualdades socioeconômicas, promovendo a difusão de informação e oportunidades pelos quatro cantos do globo. No entanto, apesar das expectativas, os

“dividendos digitais” decorrentes das novas tecnologias têm sido distribuídos de forma desigual, Passando ao lado de um dramático e generalizado ímpeto emancipatório. Além disso, como os privilegiados tendem a agarrar os recursos e as habilidades necessárias para se beneficiar das TICs, os necessitados podem ser “expulsos” da revolução da banda larga. Com base nestas preocupações, o

objetivo do artigo é rever o “estado da arte” do debate sobre desigualdade digital, lançando luz sobre cinco pontos principais: 1. A definição adaptativa de “clivagem digital”; 2. Abordagens metodológicas; 3. Interação

com outras formas de desigualdade (status socioeconómico, educação, raça, género, idade); 4. Dimensão global e “periferias digitais”; 5. A questão intrinsecamente política da “ação conectiva”.

Palavras-chave: Desigualdade, clivagem, capital, Internet, banda larga

INTRODUCTION

Invented only in 1989, the World Wide Web can be considered as the most rapidly spreading innovation in recent history. The number of users jumped from 16 million in 1995 to more than 4 billion in 2017 (Internet World Stats, 2018). According to the early observers, its diffusion could reveal a dramatic emancipatory potential: the platform would have promoted informational capital in the geographical and socio-economic peripheries of the globe. However, this revolution has failed to realise: rather than reducing gaps, Information and Communication Technologies may have exacerbated present inequalities, tilting the distribution of new opportunities towards the already advantaged groups. If one third of the world population has some form of online access, the allocation of IT-related resources is still systematically rigged, stressing differences in the way people not only access, but also benefit from internet activities.

In this paper, I review the most important debates around digital divide and digital inequality. In the first section, I briefly describe the theoretical definition of the concept, as well as its evolution in the recent decades. Then, I examine the main methodological approaches. In the following part, I dive into the matter: I analyze its interaction with pre-existing forms of inequality, both on vertical – socio-economic status, education – and horizontal patterns – race, gender, age. Fourthly, I analyze the digital divide in global and comparative terms, accounting for its spatial dimension: are virtual and physical “peripheries” better-off from the IT revolution? In the fifth part, I point out the main political underpinnings, discussing its role in “giving voice the voiceless” (Norris, 2000). Finally, I conclude.

1. DIGITAL DIVIDE: AN ADAPTIVE DEFINITION

Since the 1990s, the introduction of Internet was welcomed with euphoria by the academic and public opinion. The widespread belief that new technologies would have “leveled the playing field”, however, came soon to an end: evidence from the US Telecommunication demonstrated that African Americans and rural areas were lagging behind in computer equipment purchase (NTIA, 1995). Scholars began to talk about a “digital divide”, describing the gap between the “haves” and “have nots” of the internet revolution (Norris, 2000). The debate was framed in terms of in-out dynamics: those “outside” the digital world should catch up with the insiders of the cyberspace, as subaltern categories (minorities, low-income households) were normatively deemed to fall on the “wrong” side of the divide (Graham, 2011). This perspective resulted to be problematic on three main accounts.

First, the idea that guaranteeing access to new technologies would be sufficient to adjust the unequal distribution of opportunities was fairly simplistic - failing to account for the use that people make of these resources. DiMaggio, Hargittai, Celeste and Shafer (2004) highlighted how the mere access to the internet was by no means explanatory of the benefits arising from IT-based opportunities: if capital endowments determine “first-level” access, indeed, “demand drives intensity of use among people who have access” (DiMaggio et al., 2004). For example, young people were proved to spend more time online than adults, and to use it for a wider range of activities, despite being overall less likely to take access.

Secondly, the old paradigm was ill-suited to discuss situations in which the advantaged make a more efficient use of the resources they receive, which seemed to be the case. The internet, with respect to previous technological advances (as telephones or TVs), required a higher degree of sophistication, demanding users’ active involvement; ITC availability by itself would not close existing gaps in skill and capital distribution. According to Min (2010), IT skills, together with political motivation, would be the most robust predictors for explaining a “political” use of the Internet, significantly more than other socio-demographic variables (age, class, gender, race, education).

Finally, “connectivity” was initially thought as a bipolar division between the “connected” and the “disconnected”; nonetheless, it should rather be imagined as a

continuum, with different forms and degrees of interaction. In this framework, contextual characteristics (politics, economy, institutions, culture) are pivotal to shape the collective definition of the Internet, and the way it is perceived in everyone's lives. Studying the introduction of new technologies in Egyptian classrooms, Warshauer (2003) noted that access to the Internet is just one of the aspects that drive the effective use of ICTs by school pupils. The author advocated for a new understanding of the divide, which would account for the complex, inherently political, process of "co-constitutiveness" between technology and society.

Di Maggio et al.'s landmark study (2004) developed a broader framework for digital inequality, encompassing five main elements: 1. Technical means (which replaces the old idea of "access"); 2. "Autonomy of use" (for example, availability of a home computer); 3. "Use patterns" concerning the way the ICTs are used; 4. "Social support networks" that users can rely on; and 5. "Skills" for using technologies. If the "first level" was focused on access, this "second-level" divide would therefore shift the research objectives from detecting the "haves" and the "have nots" to a broader understanding of the "haves much" and the "haves little" (Hilbert, 2011). This "dynamic" definition would allow scholars to study not only current gaps among the population, but more importantly the incremental advantage provided by disruptive innovations: as technological updates were introduced in the market with increasing frequency, "standing still" could easily translate into the "falling behind" for the disconnected (Graham, 2011).

2. METHODS: THE PUZZLE OF DETECTING DIGITAL INEQUALITY

Along with the definition of digital divide, research strategies have evolved over time, trying to elucidate the root causes behind digital inequality. The first approach – namely, measuring access rates – was convenient for policymakers. The reasoning went as follows: once access rates across groups and age bands were considered as engendering divides in digital "profits", extending broadband coverage would be sufficient to close the gap. However, this approach did not account for the complexity of the problem (Barzilai-Nahon, 2006). Looking at the "raw" access rates leads to disappointing results, risking to inflate the disadvantage of youth who do not have home computers, or collapsing digital opportunities with actual interest for IT ac-

tivities (DiMaggio et al., 2004). On this account, different methodologies have been employed to elicit the manifold “angles” of digital inequality.

To begin with, when studying second-level inequality, most scholars employ self-assessment questionnaires, detecting IT habits by means of cross-sectional designs. This approach seems powerful at collecting large amounts of data, describing IT usage distribution across horizontal and vertical characteristics. On the other hand, this measure may lack internal validity for two reasons. Firstly, statistical “noise” might result more difficult to eliminate; second, self-assessment measures could be “pulled” down by a lower perceived self-efficacy. For instance, Hargittai and Shafer (2006) discover that women in their sample tend to underestimate their abilities when coming to online skills. A more appropriate method, hence, could be that of direct ability-testing: this is the case of van Deursen and van Dijk (2010), who administer capacity tests to survey participants. This approach, though, may suffer from upward ability bias – recording higher-than-expected scores as a result from the “increased” motivation to perform (a sort of Hawthorne effect).

The analysis of digital convergence in IT usage is even more worrisome, often leading to contradictory results. Looking at the relative rate of change in worldwide access among groups, in fact, digital gaps seem to decrease; in absolute terms, however, white males, high-SES and urban users seem to have “outpaced” the other categories (DiMaggio et al., 2004). To come towards this flaw, Martin (2003) proposes to look at odds ratio; using this tool, white people’s advantages seem to have fallen until 1997, and then risen in the 1997-2001 period. Similarly, Hilbert (2013) employs a measure of bandwidth flaw – a gradational scale which would determine the distribution of “bites” and “bits” on the local, national and global level. Measuring ICT capacity per individual, he calculates the Gini concentration of digital inequality worldwide, finding out that it has significantly reduced in the last two decades - from 0.64 in 1986 to 0.32 in 2010. However, what these quantitative designs cannot detect is the quality of Internet use - what Hargittai calls “capital-enhancing activities”. At the end of the day, a multi-faceted approach is needed, combining qualitative and quantitative methods to disentangle the profound drivers of digital inequality.

3. INSIDE THE BLACK BOX: DIGITAL DIVIDE IN PRACTICE

Despite offering an inexpensive and accessible technology, usage of the internet is strongly associated with socioeconomic status, gender, age, race and educational attainment. These characteristics tend to explain not only access to ICT tools, but also how individuals benefit from them.

3.1 Vertical inequality and stratification in IT usage

To begin with, socio-economic background is one of its strongest predictors for online habits. DiMaggio et al. (2004) point out a quasi-linear relationship between the two: 25% of people with income lower than 15.000 dollars make use of ICTs, while this is the case for 80% of the over 75.000. For Livingstone and Helsper (2007), this trend is confirmed among younger populations. Studying a sample of British children, they find evidence for both first and second-level divide: having a computer at home remains one of the strongest “explanans” for access to internet; however, middle-class children are more likely to make a “better” use of ICTs, taking up more opportunities for personal enhancement. Accordingly, Robinson (2009) analyses children’s approach to the Internet in relation to their socio-economic background. Comparing a rich dataset with in-depth, qualitative interviews, she finds out divergent trends among lower and higher class children: low-income children, who take access from school computers, tend to develop “a taste for the necessary”, maturing a goal-oriented approach; by contrast, middle and upper-class children, who often have computers at home, can afford to “play seriously”, enhancing their general knowledge by means of an “exploratory stance”. According to the author, this kind of “informational habitus” would exacerbate, rather than reduce, digital disadvantage. Zillien and Hargittai (2009) agree with this conclusion; employing a cross-sectional design, they demonstrate that higher SES individuals tend to use Internet for capital-enhancing activities, as reading news, mail usage and making research on travelling, while least well-off use it for “less profitable” tasks.

3.2 Race: what socioeconomic gaps cannot explain

Differences among ethnicities have been early noticed in the literature. In general, in the US whites enjoy a higher provision of broadband and computers (US Bureau,

2018); on the other hand, blacks and Hispanics are more likely to own smartphones, and to use them for meaningful activities, as searching health information or job seeking (Perrin, 2018). DiMaggio et al. (2004) find that, even after controlling for income gaps, a small disadvantage in ICT ownership for the African American remains unexplained, with this gap increasing over time. Campos-Castillo (2012) disagrees with DiMaggio et al.'s findings: recovering blacks and Latinos' use of the Internet in the last decade, he draws a different story. According to the author, blacks and Latinos did enjoy an increase in terms of access in recent years, but the divide for absolute access has remained constant throughout the decades. Secondly, most studies underscore the intersectional "burden" of race and income: African Americans are twice as likely to be cut off from their internet provision for economic purposes, and less likely to have high-quality connection (Perrin, 2018). To prove this hypothesis, Jackson, Zhao, Kolenic, Fitzgerald, Harold and von Eye (2008) study a sample of 515 US children, comparing their preferences over IT usage. They find that Afro-American children are more likely than white pupils to use the Internet for non capital-enhancing activities; furthermore, their involvement in modern technologies is reported to be a good proxy for academic performance. However, this effect varies along gender lines: Afro-American females benefit most from the internet when compared to other groups, while the opposite seems to be true for Afro-American males.

3.3 Gender divides: a matter of unequal opportunities

The existence of a "gendered" divide has been long discussed, and the literature did not come to an agreement. Whereas a usage gap penalized women in the first decade of the internet, it has reduced over time, and today women are reported to use IT devices more than men (Hilbert, 2010). Female users have often been associated with stereotypical images, labelled as less "tech-savvy" and "technophobic". Hargittai and Hinnant (2008) bring empirical evidence to this argument, reporting that women tend to develop lower levels of IT understanding and autonomy of use. According to Hilbert (2010), by contrast, gender bias has reversed: once controlling for employment, education and background, it turns out that women use ICTs more intensely. Therefore, gender divides may rather lay on discriminatory processes in the distribution of digital opportunities. To prove this hypothesis, Livingstone and Helsper (2007) track the interaction between gender and age throughout the early lifetime span: whereas at lower ages no significant gap exists, at 7-8 years old a dis-

crepancy favoring women's access opens up, touching its peak around until 16-17. Yet, if women use internet more *ceteris paribus*, boys and middle class children are reported to benefit more from IT opportunities, useful to connect with the others and pursue enhancing activities.

3.4 Age and education: status-related advantage or cumulative experience?

As a last point, the literature debated about the role of educational attainment and age in determining digital divides. For Hargittai and Hinnant (2008), education explains most of the variance in internet usage; if the age-band between 18 and 24 years old shows the highest connection rates, internet penetration seems to be more effective among college degree-earners and high schoolers. However, educational background ceases to be statistically significant once controlling for respondents' autonomy and experience; therefore, education may simply be a proxy for individual skills. On the other hand, educational attainment seems to be correlated with diverse preferences for online activities, as the less educated are more often in search of jobs. For DiMaggio et al. (2004), the age gap may be reducing throughout the years, showing a convergence in internet habits among groups as these get more involved. Hargittai and Dobranski (2017) partly disconfirm these hypotheses, showing that differentials tend to persist even in older ages: older seniors are less skilled than adults and less eager to pursue capital-enhancing activities. Lastly, van Deursen and van Dijck (2010) try to disentangle the intricate relationship between age, ability, education: the authors administer ability tests to a sample of students; once regressing scores with personal characteristics, education appears to be the most important contributor to internet skills, while age would explain only the ability in "operational" tasks, which in fact relates to experience. Therefore, age premia would not be able to cope with more structural deficits in internet ability, as gathering information and using the Internet for specific goals (strategic skills).

4. SPATIAL AND GLOBAL DIVIDES: IS THERE ROOM FOR EVERYONE IN THE "GLOBAL VILLAGE"?

The spatial dimension of digital inequality has been one of the most significant subjects of debate. Already in 2000, Norris foresaw the emancipatory potential of

new technologies: ICTs could enhance the opportunities of poorer nations, relieving their inhabitants from the burden of anonymity, inability to participate, political marginalization (Norris, 2000). However, acknowledging the risks related to these innovations, she wondered whether it would “strengthen the voice of the voiceless, or produce new forms of inequality”. The question seems still relevant.

According to the World Bank (2016), the penetration of technological tools has virtually eliminated first-level divides, as more than half of the world inhabitants enjoy Internet coverage; as of today, more households have access to ICTs than to clean water or electricity. The Bank argues that it is African and Asian “netizens” to benefit more from the Internet, using ICTs for seeking opportunities and important information (health, sanitation, nutrition, etc.). What is problematic, though, is the fact that “digital dividends” (benefits from ICT use) are still biased towards the most advantaged regions, both within and between countries; in 2017, only 35.2% of Africans and 48.1% of Asians had some form of online access (Internet World Stats, 2018).

Despite being the first country promoting “Internet inclusion”, the US has shown since early times huge divergences in IT distribution, with a consistent gap of around 10% between rural and metropolitan areas (Strover, Whitacre, Rhinesmith, & Schrubbe, 2017). Stern, Adams and Elsasser (2009) explore geographic divides in the US, studying gaps in access and use. The authors note that ICTs were first available to wealthiest households, and therefore concentrated in city areas. Drawing on a national telecommunication survey, they find out that rural populations lag behind both for IT access and broadband provision, rarely benefitting from high-quality connection.

Exploring political-economic dimensions, Strover (2014) points out that the US policy for combatting the divide was “episodic” and largely left to be regulated by market forces – which in turn explains why higher prices, connection quality and broadband speed discouraged IT adoption in rural areas. If the quick diffusion of mobile-based Internet access did contribute to reduce this gap, the author remarks how the smartphone “screen size impedes full functionality”, insofar as many tasks cannot be performed on the mobile (e.g. job applications, search for opportunities, etc.). Nonetheless, Whitacre, Strover and Gallardo (2014) find evidence for the positive impact of ICTs on employment and income growth in rural areas. According to the scholars, it is broadband adoption, rather than Internet availability, to drive in-

come opportunities for rural US inhabitants. Similarly, Strover et al. (2017) report the beneficial effects of Free Hotspot initiatives promoted by libraries in the rural regions of Maine and Kansas, empowering the rural unskilled with a feeling of “competence” and “competitiveness”.

Gaps in digital involvement at the country level are confirmed when looking at international patterns. At the world level, Graham (2011) describes a “digital apartheid”, discriminating the “absent” from those who enjoy the online revolution. Guillen and Suarez (2009) frame these global differentials with the Dependency Theory: according to them, broadband distribution would have been concentrated at the Western “core”, discriminating the “peripheries” of the globe. They analyze access distribution on a cross-national dataset that account for regulatory, political and social factors in the 1997-2001 period. Results show that GDP per capita still explains most of Internet concentration among countries, followed by privatization and liberalization policies.

Coming to cross-national trends, Hilbert (2013) points out the need of going beyond access-based measures, and looking at broadband capacity: if the number of subscribers per capita has increased by 11% in the 1986-2010 period, capacity per capita has risen almost three times as much (31%). Interestingly, the growth rate in per capita broadband capacity has responded to the introduction of new, disruptive technologies in the world markets. For instance, the introduction of smartphones in 2008-9 provoked a peak in capacity differentials; however, once the costs for these new devices were made accessible to low-income consumers (right after 2010), the digital Gini index fell again. In the longer period, Hilbert depicts a convergence in bandwidth-per-capita distribution. Nonetheless, this trend is mostly driven by the BRICS – while the remaining 156 countries still own less than 26% of the total ICT capacity.

Moreover, a focus on skill-based divides displays even stronger differentials. Graham (2014) highlights how most of the “production” of digital knowledge is still concentrated in high-income countries; for instance, France produces two times as much of the Wikipedia content as all the African nations together, thereby confuting the hypothesis of a democratic, accessible “open space” of knowledge. Whereas no such databases report the worldwide intensity of Internet usage, differences in “quality” of online activities across world regions are expected to be wide, and possibly increasing.

5. A LOGIC OF “CONNECTIVE ACTION”: ICTS’ ROLE FOR UNMAKING INEQUALITIES

Apart from promoting individual development, Internet can serve to enhance people’s rights, giving to the marginalized an accessible tool for exercising the “voice” option (Hirschman, 1970). Broadband expansion was expected to enable individual freedom, so as their ability to “organize, communicate, distribute information, and participate” (Elliot & Earl, 2016). However, the situation is more nuanced, as this opportunity may be better capitalized by advantaged groups. In fact, if the privileged are proved to benefit more from what the Web offers, middle and upper classes could be further able to advocate for their needs, ignoring the concerns of those who are “cut-out”: minority, poor, rural, and politically excluded communities.

Bennet and Segerberg (2012) suggest that the logic of collective action has been recently complemented by a new form of organizing - that of “connective” action. In the past, movements were based on a structured, often hierarchical, understanding of contentious politics, and protests were built on a strong sense of identification. By contrast, web-based mobilizations have shifted to a more “fluid”, democratic conception of advocacy. As the author argues, the *trait d’union* of movements all around the world – from the Arab spring, to the Indignados, passing through Occupy Wall Street – is the individualistic framing of the protests, whereby participants do not belong to groups or organizations. If the collective action in the past was mainly considered as a problem of “common good” - ICT-managed protests have reduced entry barriers to almost zero, contributing to the formation of new cross-class, cross-cultural coalitions.

Despite the clear appeal of this perspective, authors as Elliot and Earl (2016) take a different stance. They lament a fundamental error in the empirical approach: looking exclusively at participants’ involvement to exceptional events, these studies would suffer from selection bias, failing to respond to a fundamental question: once access barriers discourage the disadvantaged from participating, do middle and upper-class people engage more online than lower strata? In view of testing this hypothesis, they compare cross-group participation to an online petition. Analyzing online political involvement, they find no significant differences across gender, ethnicity and class. However, these results differ with what found by Schradie (2018): looking at the

growth of a massive mobilization in North Carolina, the scholar highlights different attitudes in online activism across income groups. She uses both a quantitative comparison (in number of posts, tweets, and likes on social networks) and qualitative strategies (personal interviews). Schradie reports diverse attitudes among groups: on one hand, upper-class organizations tend to share more contents online, making a better use of IT equipment; on the other, working class groups and unions face ability barriers and time constraints; lower-income demonstrators seem to suffer from the invisible “labour cost” of using the social networks, which requires commitment in terms of time, money and effort. These claims are in line with Zillien and Hargittai (2009), for whom low SES interviewees are 33% less likely to look for political news, and Hargittai and Shaw (2013), that describe how online participation is strongly correlated with offline engagement. Min (2010) agrees with this perspective, and reports that male, white and higher educated citizens use more often the internet for political issues - exploiting what Norris named as “the democratic divide”.

6. CONCLUSION: A LONG WAY TOWARDS DIGITAL EMANCIPATION

As of 2004, DiMaggio et al. commented the state of research on informational inequality as “severely balkanized”. Fourteen years later, the situation has barely changed. Digital divides are reason of discussion not only about their definition, but also on the empirical approach to use; on many accounts, no agreement has been found. However, it is possible to trace some general patterns.

First, access-based divides are sharply declining over time, especially thanks to the introduction of new devices (as smartphones). Second, Internet access may open new opportunities and reduce traditional inequities to some extent (Rains & Tetsi, 2017); however, it should be acknowledged that “those who function better in the digital realm and participate more fully in digitally mediated social life enjoy advantages over their digitally disadvantaged counterparts” (Robinson, Cotten, Ono, Quan-Haase, Mesch, Chen, Schulz, Hale, & Stern, 2015). Relevant differences in most countries can still be found across socio-economic status, educational attainment, age and race. The rich, the experienced, the highly educated and white people profit more from Internet consumption, using it for capital and knowledge-enhancing activities. With regards to gender, evidence is inconclusive; nonetheless, old-fashion stereotypes on

women's aversion towards technologies seem to have been overcome. Fourthly, vertical and horizontal divides are perpetuated along spatial patterns, where the peripheral regions of the world have still to be invested by the web-revolution. Finally, political engagement through the Internet is, as expected, often related to economic and social capital, with the risk of cutting out the "digitally disenfranchised".

All in all, the issue of technological involvement is inherently political. Despite some scholars have argued that the simple abatement of economic barriers, taxes and regulations, may result into enabling more "netizens", the digitally excluded need other forms of empowerment (Norris, 2000); this is signaled by a progressive shift from a "digital divide" to a "digital inclusion" discourse (Strover, 2014). The US is a relevant case study, as most of the dramatic reduction of the first-type divide in the 90s stems from public-policy responses, especially in forms of campaigns and investments (DiMaggio et al., 2004). Insofar as knowledge, self-confidence and IT skills seem to be important catalysts for a virtuous use of digital spaces, policymakers' initiatives should prioritize "digital education" through learning courses and training, enhancing people's awareness about ICT opportunities.

To conclude, Warshauer (2003) is right in arguing that the internet is neither "inherently good or inherently bad. Of course, to complicate matters, neither is the Internet neutral". As this area of research is still in its infancy, efforts should be concentrated to disentangle the complex, multi-faceted issue of digital inequality, ultimately giving it a place in the "twenty-first century pantheon of inequalities" (Robinson et al., 2015). Grounding on serious empirical research, inclusive IT policies could help to bridge the existing divides, making the "Broadband revolution" a useful asset for everybody.

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The Three Levels of the Digital Divide: Barriers in Access, Use and Utility of Internet among Young People in Spain

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Abstract

This paper explores the three levels of digital divide among young people living in the region of Madrid (Spain). We use a qualitative approach, based on 20 in-depth interviews, in order to describe the personal process of Internet appropriation among this collective, taking into account the differences associated to gender, age, education, geographical habitat and type of technology use. Taking into account the three levels of the digital divide, we explore

5 important barriers (access, skills, motivation, emotions and utility) that influence the type of use of digital technologies by young people. We conclude that, even among youngsters who frequently use digital technologies, there are important asymmetries and barriers that limit the utility they can get from them, related to their sociocultural background and their personal processes of technological socialization.

Keywords: Youth, digital technologies, Internet, digital divide

Os Três Níveis da Divisão Digital: Barreiras no Acesso, na Utilização e na Utilidade da Internet Entre Jovens em Espanha

Sumário

Este artigo explora os três níveis de exclusão digital entre os jovens que vivem na região de Madrid (Espanha). Utilizamos uma abordagem qualitativa, baseada em 20 entrevistas em profundidade, para descrever o processo pessoal de apropriação da Internet neste coletivo, levando em consideração as diferenças associadas ao gênero, idade, escolaridade, geografia do habitat e tipo de uso da tecnologia. Levando em conta os três níveis da clivagem digital, exploramos 5 bar-

reiras importantes (acesso, competências, motivação, emoções e utilidade) que influenciam o tipo de utilização das tecnologias digitais por parte dos jovens. Concluímos que, mesmo entre os jovens que utilizam frequentemente as tecnologias digitais, existem importantes assimetrias e barreiras que limitam a utilidade que delas podem obter, relacionadas com o seu background sociocultural e os seus processos pessoais de socialização tecnológica.

Palavras-chave: Juventude, tecnologias digitais, Internet, clivagem digital

INTRODUCTION. YOUTH AND DIGITAL TECHNOLOGIES

The process of digitalization (Croon Fors, 2013) and the rising of the information society (Feather, 2013) have supposed a large transformation of both modes of production and organization of capitalist societies and people's daily practices. In this sense some authors have announced the advent of a third industrial revolution (Castells, 2011; Rifkin, 2011), that would be based on the global production and distribution of information. Although the process of computerisation started almost 30 years before, it was specifically during the 1990s when personal computers and Internet connections started to arrive massively to the domestic realm, and ordinary people began to use these technologies in their daily activities, as Bakardjieva (2005, p. 4) has pointed out.

In the youth studies literature, since the start of this digitalization process it was common to highlight the affinity of new generations with digital technologies, speculating about the transformative potential of these technologies in relation to learning processes, communication practices or leisure activities. Concepts such as technology generation (Weymann & Sackmann, 1994), Net generation (Tapscott, 1998), digital generation (Buckingham, 2006), millennial generation (Howe & Strauss, 2000) or the famous dichotomy between digital natives and digital immigrants (Prensky, 2011) populated the academic literature and the mass media, trying to define new generations by means of their embracing of technological patterns. Although most of these typologies have been questioned because of their determinist approach to technological diffusion (Kretchmer, 2018; Ragnedda, 2017; Zimic & Dalin, 2011), the the essentialization of youth (Buckingham, 2011) and their outrageous lack of empirical evidence (Jones & Shao, 2011; Selwyn, 2009), they are still very popular tools to make sense of young people's digital practices. This form of generational marketing (Haddon, 2007) has been fed up by the development of digital culture industries, which focused on children, teenagers and youngsters as their main marketing targets (Montgomery, 2009).

The association of youth with technological change is not precisely new; for instance, in the American post-war context it was common to highlight the affinity between youngsters' and TV media culture (Buckingham, 2002). However, what is characteristic of this digital natives' rhetoric is the cyber-utopian approach that underlines the potential transformative logics of technology adoption and diffusion. Since they are the first generation socialized through digital technologies, young peo-

ple are conceptualized as the true native inhabitants of the digital world, proficient in the use of new technological innovations and able to speak the language of digital platforms, whereas the older generations are digital immigrants, who always retain their pre-digital accent, their foot in the past (Prensky, 2001). Because of their intuitive and innate affinity towards digital spheres, young people seems to have better digital skills than their parents, being much better prepared to confront the challenges of the information society and to build the digital society of the future, which would seemingly be characterized by a more flexible and entrepreneurial approach to labour, a more democratic decision making (Tapscott, 2008) and a new scale of values, associated with civic engagement and prosocial attitudes (Howe & Strauss, 2000).

This utopic model of technological transformation, and its association to young people, has been extremely controversial among academia, because it presents the stereotypical ideal of young hyper-connected people, intuitively tech-savvy and prone to accept flexibility and instability in their labour career because of their entrepreneurial attitude towards work. As Selwyn has pointed out, “the notion of the ‘digital native’ should be seen more as a discursive than descriptive device, employed by those seeking to exert some form of power and control over the shaping of the digital (near)future” (2009, p. 371). In other words, there is an ideological affinity between this reductionist approach to young people, which invisibilize diversity and inequality, and the neoliberal capitalist basis of the information society which promotes digitalization, as some critical authors stress (Banaji, 2011; Gilleard, 2018; Jones, 2011). In order to counter this utopian narrative of progress, digital divide approaches have studied the diverse ways in which digital technologies and the information society are reproducing and enhancing social stratification.

THE THREE LEVELS OF THE DIGITAL DIVIDE

Digital divide studies have shown how the advent of the information society was engendering new processes of social stratification. As new media and technologies became more important in the articulation of economic, social, and cultural dynamics, new forms of dependency on digital technologies emerged, and exclusion from the digital society also became a new form of social exclusion (Antonio & Tuffley, 2014; Beauchamps, 2012; Sparks, 2013; Van Aerschot & Rodousakis, 2008). The ar-

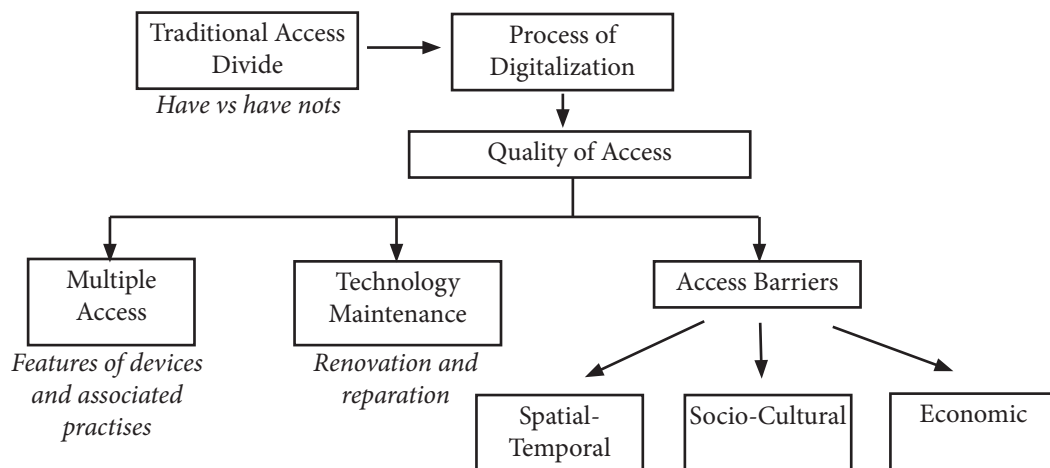
rival of information society is an ambivalent process (Castells, 2011), as it potentially promotes new forms of liberation but also engenders new forms of domination and social exclusion (Espín, 2011; Mariën & Prodnik, 2014). Digital divide studies, consequently, have progressively changed our understanding of the issue and have focused on different aspects of digital inequality, following the pace of technological and social transformations that experienced contemporary society from the mid-90s to the present.

The first digital divide studies, during the 90s, focused on the access to digital technologies and to the Internet (Ghobadi & Ghobadi, 2015). Firstly, they described the different degree of Internet penetration among developed and developing countries, but, progressively, started to highlight asymmetries among regions, collectives and social groups in developed countries (Compaine, 2001). It was clear that the pace of digitalization was not equally distributed among the entire population (Norris, 2000), and thus the main issue was how to foster policies to promote the Internet access among vulnerable groups, who did not have the economic resources to pay for expensive devices and domestic Internet connections. This political approach to digital inclusion, which was later called the ‘first level of digital divide’ or ‘access gap’ (Van Deursen & Van Dijk, 2015) was still extremely naïve because, as Ragnedda has pointed out, it “mainly focuses on the cost and diffusion of technologies, reducing the phenomenon of the digital divide to a technological and economic issue” (2017, p. 16). More importantly, this approach was based on a deterministic vision that hid the social aspects of digital inequality, as it sustains that the mere promotion of people’s access to digital technologies can actually reduce inequality (Ragnedda, 2017, p. 20). The problem lies on a binary conceptualization of access, the model of ‘have and have nots’ (Haight, Quan-Haase, & Corbett, 2014; Selwyn, 2004; Van Deursen & Van Dijk, 2013), in which digital connectivity is reduced to having access, or not, to the Internet.

Recent studies have tried to develop a more complex understanding of the first digital divide, investigating the link between conditions of access and digital inequalities: for instance, Gonzales have developed the technological maintenance theory (2016), that focuses on the economic impact of the cost of the Internet connection and of keeping the computer updated. Other authors have focused on the consequences of using different devices to access to the Internet, comparing smartphone and computer oriented activities (Pearce & Rice, 2013) or highlighting the importance of multiple access (Van Deursen & Van Dijk, 2015, p. 380). That is, the access

though different devices makes possible to benefit from the wide array of possibilities offered by new technologies. Finally, some temporal, social, cultural and economic constrains also influence the quality of young people's access, and that enables some digital practices and inhibits others (Robinson, 2009, 2013). In figure 1 we summarize the main aspects of the access gap.

Figure 1. Evolution of First Digital Divide Studies



Source: Own elaboration

The process of digitalization made evident in the mid-2000s that access to the Internet was not anymore the central issue of digital stratification among young people in developed countries, except for the most vulnerable social groups. This fact motivated the apparition of the 'second level of digital divide' (Castaño, 2008; Correa, 2016) or 'usage gap' (Van Deursen & Van Dijk, 2013). Here the focus moves, beyond access, to the different ways in which digital technologies are used, taking into account people's social, cultural and economic backgrounds, as well as their motivations, interests and digital skills. Empirical research about the usage gap in young people contributed to question the idea that youngsters form a homogeneous collective in terms of Internet use; as Internet access is quite generalized among youth, it would be more correct to think about several digital generations (Buckingham, 2006), and not just one idealised group of cyber-savvy users. Several typologies of young users have been developed (Dutton & Blank, 2015; Dutton & Reisdorf, 2017; Gire & Gran-

jon, 2012; Robinson, 2014) that tries to make sense of these various sorts of Internet domestication (Haddon, 2007) among young people. Especially relevant for us is the distinction between visitors and residents (White & Le Cornu, 2011), very akin to the one elaborated by Laura Robinson between task-oriented and leisure-oriented informational habitus (2009). This author analyses the relation between quality of access, attitudes towards technology and effective use of digital technologies, and shows how youngsters with a better quality of access to the Internet experience an informational advantage (Robinson, 2012) in contraposition with their low-quality access counterparts, who can only use digital technologies for specific tasks and deal with important temporal, spatial and economic constraints.

Beyond these users classifications, second digital divide studies have contributed to build a more nuanced and multidimensional conceptualization of digital inequality (Ghobadi & Ghobadi, 2015; Mariën & Prodnik, 2014; Ragnedda, 2017) and to evidence new gaps or barriers that influence Internet appropriation by subjects. In this paper, we are going to focus in three relevant gaps—apart from material access—that also influence young people use of digital technologies. The first one is the ‘skills gap’ (DiMaggio & Hargittai, 2001) which is related to the different competencies that are needed to make use and take advantage of digital technologies. Once it was obvious that youngsters were not the skilled digital generation promised by cyber-utopic approaches, the promotion of digital literacy among new generations became a central issue of the political digital agenda (Livingstone, 2008). Van Dijk and van Deursen (2014), for instance, distinguish between ‘medium-oriented skills’, the technic and operational capacities needed to physically operate digital equipment, and ‘content-oriented skills’, the ability of benefit from the potentialities of digital technologies, that include communicational skills, information-seeking skills, content creation skills and strategic skills.

The second barrier is the ‘motivation gap’, which has been described in the 4 gap model (Van Deursen & Van Dijk, 2015), where the process of digital inclusion (or exclusion) is analysed by means of a complex interaction between motivation, access, skills and use of the Internet. The motivational dimension of Internet domestication has been highlighted recently in empirical works (Dutton & Blank, 2015; Dutton & Reisdorf, 2017; Van Aerschoot & Rodousakis, 2008) and shows how people’s attitudes towards technologies, particular interests in specific features of ICT (such as communication, videogames and leisure, information retrieval, etc.) or motivation, in general terms, play an important role in young people appropriation of technolo-

gies, especially regarding the process of skill acquisition, which is mainly produced gradually through the incorporation of these technologies to daily practices. It is also important to consider the process of self-exclusion of the digital world because, as Gonzales points out, “the idea that some individuals choose not to be online has been labelled a form of motivational access, determined by a combination of cultural and psychological factors” (2016, p. 5).

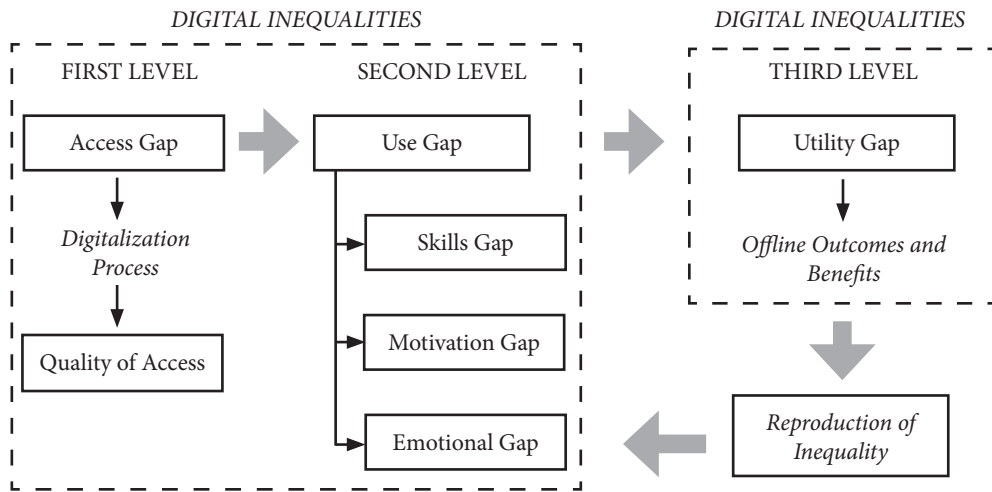
The third barrier is related to the ‘emotional gap’, that is, the emotions involved in people’s daily use of digital technologies. According to the studies that highlight the emotional costs of digital activity (Huang, Robinson, & Cotten, 2015; Klinkisch & Suphan, 2018; Robinson, 2009), there is a strong affective component in Internet use. When people deal with material, social or cognitive constraints that limit their access to digital technologies, such as lack of time, low-quality equipment or lack of self-perceived skills, they are predisposed to feel negative emotions such as anxiety, pressure or frustration. This kind of emotions can act as barriers for Internet use, blocking the process of digital domestication and, at the end, engendering processes of self-exclusion.

Notwithstanding its undeniable contribution to diversify digital inequality empirical studies, the second digital divide perspective has an important limitation that is related to the fact that “the development of the theoretical aspect of digital divide studies has lagged behind the development of more empirical studies” (Ragnedda & Muschert, 2018a, p. 2). Therefore, many studies have analysed different forms of digital inequality (typologies of use, digital skills, motivations, etc.), but there is little reflection about the articulation of digital inequalities with more general sociological theories about social inequalities. There is an exception in Bourdieu’s theory of capitals, which has been extensively used in digital divide approaches (Ragnedda & Ruii, 2018; Robinson, 2009; Straubhaar, Tufekci, Spence, & Rojas, 2012). Also, the recent book *Theorizing Digital Divides* (Ragnedda & Muschert, 2018b) presents some other social theories appropriate to analyze digital inequality, such as Simmel’s theory of information (Muschert & Gunderson, 2018), de-colonial theory (Moyo, 2018) or social constructionism (Kretchmer, 2018), among others. Based on a Weberian approach to stratification, Ragnedda has also recently developed the concept of the ‘third level of the digital divide’ (2017), which is referred to the offline outcomes and benefits that people get by using digital technologies, emerging a new gap, that we could call ‘utility gap’. This perspective avoids the false dichotomy between online and offline dimensions of reality, and tries to ground digital inequalities in digital practices in

people's social activities and life trajectories. Under this perspective, we can close the circle of digital and social stratification (figure 2) and understand how digital inequalities are not only reproducing but also deepening previous processes of social stratification:

“I shall argue that there exists a kind of recurring cycle between social and digital inequalities. That is, social inequalities are the root of digital inequalities, and at the same time digital inequalities increase and reinforce social inequalities already present in a stratified social sphere” (Ragnedda, 2017, p. 48).

Figure 2. Three levels of digital divide. Circle of social-digital inequality



Source: Own elaboration based on Ragnedda (2017, p. 51)

METHODOLOGY

The methodology of this paper is qualitative, based on 20 in-depth interviews, which serve to analyse the biographical processes of technological socialization among young people living in the region of Madrid, Spain. Specifically, in this paper we focus on those youngsters whose basic access to digital technologies is already granted. Accordingly, our main research question concerns the identification of the

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main gaps related to access, skills, motivation, emotions and utility associated with young people's experiences of using digital technologies. We try to evidence that even among subjects who have frequent access to digital devices, there are still important gaps and barriers that differentiate their use of these technologies. Data collection was conducted during the first quarter of 2017, using a structural sample based on the following three sociodemographic variables (gender, age and education) and one lifestyle variable related to subjects' technological access. Below we discuss the relevance of the four variables included, although it is important to highlight that it was not possible to consider other relevant variables –such as ethnic origin, geographical habitat or socioeconomic condition–, which are also important in terms of digital stratification. In addition, in table I we present the main characteristics of the respondents.

Table 1. Qualitative sample. Main characteristics of the respondents

ID	City (district)*	Gender	Age Group (birthdate)	Educational Level	Technological Access
R1	Rivas	Woman	Pot. Dig. Native (1996)	Secondary	Computer-Oriented
R2	Rivas	Woman	Pot. Dig. Native (1994)	Secondary	Mobile-Oriented
R3	San Fernando de H.	Man	Pot. Dig. Native (1994)	Secondary	Computer-Oriented
R4	Rivas	Man	Transition Gen. (1988)	Higher	Mobile-Oriented
R5	Torrejón de Ardoz	Man	Pot. Dig. Native (1995)	Secondary	Computer-Oriented
R6	Madrid (Centro)	Man	Transition Gen. (1988)	Secondary	Computer-Oriented
R7	Boadilla del Monte	Man	Pot. Dig. Native (1998)	Secondary	Mobile-Oriented
R8	Madrid (Retiro)	Woman	Dig. Immigrant (1987)	Higher	Computer-Oriented
R9	Madrid (Salamanca)	Man	Transition Gen. (1993)	Higher	Computer-Oriented
R10	Madrid (Tetuán)	Man	Dig. Immigrant (1984)	Higher	Computer-Oriented
R11	Rivas	Man	Transition Gen. (1992)	Secondary	Mobile-Oriented
R12	Leganés	Woman	Transition Gen. (1988)	Secondary	Mobile-Oriented
R13	Madrid (Chamartín)	Man	Dig. Immigrant (1986)	Higher	Computer-Oriented

R14	Las Rozas	Man	Dig. Immigrant (1985)	Secondary	Computer-Oriented
R15	Madrid (Arganzuela)	Woman	Transition Gen. (1993)	Higher	Computer-Oriented
R16	Madrid (Centro)	Woman	Dig. Immigrant (1982)	Higher	Mobile-Oriented
R17	Madrid (C. Lineal)	Woman	Dig. Immigrant (1987)	Higher	Computer-Oriented
R18	Madrid (Moncloa)	Woman	Transition Gen. (1991)	Higher	Mobile-Oriented
R19	Madrid (Arganzuela)	Woman	Transition Gen. (1990)	Higher	Computer-Oriented
R20	Madrid (Arganzuela)	Woman	Transition Gen. (1990)	Higher	Mobile-Oriented

*We include the district in the case of the city of Madrid

Source: Own elaboration

1. *Gender.* As some authors have pointed out (Antonio & Tuffley, 2014; Castaño, Martín, & Martínez, 2011; Hargittai & Shaw, 2015), gender plays an important role in the delimitation of digital inequalities among young people, especially in terms of the second level of the digital divide. Therefore, at the same level of Internet accessibility, there are important differences among men and women's digital practices related to digital skills, motivations and emotional costs which are mandatory to consider. Our sample is composed by 10 women and 10 men.

2. *Age group.* Even if there is not a strict limit between the so-called digital natives and digital immigrants (Banaji, 2011; Buckingham, 2011; Kirschner & De Bruyckere, 2017) it is still important to consider the 'effect' of age in the analysis of the digital inequalities among young people. In our sample, we have considered three age groups: (1) digital immigrants, born between 1982 and 1987 (6 interviews); (2) transition generation, born between 1988 and 1993, who experienced the transition between analogic and digital technologies in the adolescence (9 interviews); (3) potential digital natives, born after 1993, so they may have potentially experienced digital technologies from childhood, but not necessarily the material and economic conditions to access to them (5 interviews). This last group roughly coincides with the called post-millennials (DiMock, 2018) or generation Z (Stillman & Stillman, 2017).

3. *Educational level.* As many studies have highlighted (Haight et al., 2014; Mariën & Prodnik, 2014; Robinson, 2009; Van Deursen & Van Dijk, 2015), educational level

is the most significant variable in defining digital inequalities and digital proficiency among young people, beyond age, gender or ethnic origin. In our sample, we have included students from two different educational backgrounds: 9 respondents have attained secondary compulsory education and 11 respondents have higher education.

4. *Technological Access.* Finally, the type of technological access is also an important factor to consider in order to analyse digital divide, especially regarding those youngsters who have been socialised through the use of computers and those who mainly access the Internet by means of mobile devices, such as smartphones or tablets (Hjelholt & Schou, 2018; Thornham & Gómez Cruz, 2016). In our sample, we have focused on two main groups: (1) mobile-oriented users (8 interviews), in which we include people whose majority of digital practices are carried out by the use of smartphones and other mobile devices (tablets); (2) computer-oriented users (12 interviews), in which we include people that use both mobile devices and computers to carry out their digital practices.

RESULTS

Digital technologies are deeply rooted in young people's experience, and mediates most of their communication, information-seeking, leisure and work activities. However, there are important asymmetries in the specific ways in which technological devices are incorporated to youngsters' daily life. On the one hand, the knowledge of the potentialities and opportunities offered by these platforms and devices are clearly associated with the personal biographical processes of technological socialization, which are developed from childhood but are continuously actualized to new possibilities, tools and personal situations. On the other hand, the process of technological socialization is social by definition, so family members, school mates, teachers, friends and other acquaintances that conform the young people's life worlds also play an important role in their access to digital technologies and in their incorporation to offline practices. Nevertheless, technological socialization is neither straightforward, nor natural or intuitive, but a long-term and continuous process which moves back and forth, and in which people experience several difficulties and barriers, depending on their particular motivation, knowledge and position in the social structure. Therefore, we have focused in five important gaps or barriers, that are related to the three

levels of digital divide, and organized in four sections: (1) Access gap, related to the first level of the digital divide; (2) Skills gap, which is one of the most important barriers that inhibit digital inclusion; (3) Emotional and motivation gaps, which we analyse together because of their close interrelation, and which, together with the skills gap, constitute the second level of the digital divide; (4) Utility gap, which is related to the offline returns of digital appropriation, that is, the third level of the digital divide.

1. Access gap

Although the access to the Internet is not a main issue for our respondents, there are important asymmetries related to the specific devices used to access and the places in which they use digital technologies. Among almost all respondents, the most common device used to connect to the Internet is the mobile phone, which has become an important part of their lives. Mobile phones are now essential mediators (Lasén & Casado, 2014) of young people's daily practices, enhance their communication and information-seeking capabilities, and also become an important practical tool for many social and personal activities, including online banking services, taking photos, access to social networks, ordering food, consulting public transport schedules, and so on. In the case of mobile-oriented respondents, smartphones cover most of their daily digital needs, and thus these youngsters do not express the necessity to have a personal computer, which is conceptualized as a more technical and rigid equipment; they express how most of the applications and services they use are better adapted to mobile phones, such as social networks apps, online banking apps, texting services and so on. This mobile-oriented use is more common among respondents without university studies, women and potential digital natives, but not all the subjects follow the same pattern. We have found that, among those people who have not been socialized since childhood in the intensive use of digital technologies, specifically personal computers, it is more common to develop a mobile-oriented use to the Internet, because these respondents can carry out most of their digital practices by means of a smartphone and do not worry about the wide array of possibilities of other technological devices.

"I have two iPads, two smartphones and the television; I have a laptop but we didn't use it yet. (...) I mainly use the iPad and the mobile phone, they seem faster and more comfortable to access to the Internet. (...) The difference is that the mobile phone is always in my pocket and the iPad is at home. Then, if I am,

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for instance, on the sofa and the iPad is on the table, I use the mobile phone because is closer. But if the iPad is closer and I want to search something or read (I usually search information about the dog) then I use the iPad, because the screen is bigger”. (R11. Man, 1992)

“It’s because the type of social media services Facebook or Instagram (...) are made to be easily used by mobile phones. If you use them by the web it’s boring, you need to be scrolling up and down with the mouse. In the mobile phone you use the app with your fingers, they are much more predictive, and I like that. (...) I only use the computer for working tasks”. (R18. Woman, 1991)

The personal computer, on the other side, is widely associated to professional and educational activities, and some of the respondents highlight that computers are their main working tool. In these cases, computers differentiate from mobile phone because of their higher productivity, the fact that you can use more office software or specific tools related to certain activities, such as audio or video edition, database management, mail services and so one. Even if the computer is seen as a more rigid device than the mobile phone, it also allows people to use a keyboard, a mouse and to have a much bigger screen, thus, in terms of writing and productivity, it is much more effective than mobile devices. Apart from this productive use, some of the respondents also commonly use computer for leisure and personal activities, even if they combine computer accessibility with the use of mobile devices. Computer-oriented respondents, therefore, highlight the wider amount of possibilities granted by computers, such as gaming, for instance, and feel that a computer is, in many cases, more comfortable than mobile devices to access the Internet. This perspective is more common among youngsters with higher education and older people, especially those who have been socialized since childhood in the use of personal computers and can choose which device is better adapted to the particular task they have to do:

“For instance, at the university, I used the computer for all the reports and tasks. For the academic or scientific searches it was much more comfortable. (...) It is for writing, mainly, that I use the computer, and when you have to look for information is faster, you can have several tabs opened, and so on”. (R8. Woman, 1987)

“For me the computer is always more comfortable, especially at work; I only

use the mobile phone for Whatsapp and personal issues. (...) It is because the screen is bigger, you have a keyboard, a mouse, etc. Writing a mail with the mobile phone is much harder". (R10. Man, 1984)

2. Skills gap

Another important gap in youngsters' engagement with digital technologies is related to the digital skills and capacities needed to use these devices, services and platforms. As we mentioned before, digital skills can be divided between medium-oriented skills, which allow people to physically operate devices and programs, and content-oriented skills, which are related to the specific uses and forms of appropriation of these devices. Among our respondents' discourses, we have not found important difficulties regarding medium-oriented digital skills, both in mobile or fixed devices. Although some respondents (mobile-oriented users) are more familiar with the interfaces of smartphones than with desktop operative systems, such as Windows, Linux or MacOS, they express being able to perform basic tasks with computers, such as turning it on, using a word processor or a browser (Chrome, Mozilla, Explorer, etc.) without special difficulties. However, in most of the cases, respondents found computer use slower and uneasy, in comparison to the easiness of mobile devices. On the other side, people who frequently use computers at work and people familiarised to computers (computer-oriented users) express quite the opposite. Even if they don't have special difficulties to operate smartphones and mobile devices, they usually suffer from the lack of peripherals (mouse, keyboard, etc.) to operate mobile devices, and feel they use them in a much more clumsy and non-intuitive way than computers. The important issue, though, is the degree of domestication of different technological devices by these two ideal types of users. Thus, mobile-oriented users are more familiar to mobile devices and to operate them with their fingers and tactile screens, whilst computer-oriented users prefer to use accessories such as keyboard and mouse, because this is the way in which they have traditionally learnt to use digital technologies during their technological socialization processes.

"I think that it is easier to type on a computer than on a mobile phone, and also it is better for the eye. I use the tool that is at hand but, if I have to carry out an exhaustive search, I use the computer because I am going to dedicate more time concentrated to do that". (R19. Woman, 1990)

Similar to Pearce and Rice (2013) findings, we found that computer-oriented respondents have, in general terms, an important informational advantage related to their content-oriented skills. In the case of mobile-oriented users, when they need to use a laptop or a desktop computer for a specific task –bureaucratic procedures, applying for some institutional service, downloading audio-visual media, etc.– they usually ask someone of their inner social circle to help them. They usually do not try to perform the task by themselves because they feel that something could go wrong and they would not be able to fix it. The effect of this support is ambivalent because, on the one hand, it solves the immediate difficulty, and the subject can solve the specific difficulty, but on the other hand it feeds dynamics of self-exclusion and keeps people unmotivated to develop new digital skills that require time, effort and moving beyond their digital comfort zone. In the case of digital immigrants, this lack of content skills regarding computers is more common among women than men, because among this age group it is still more common that men have developed more computer-oriented skills during their socialization. In the case of potential digital natives, this gender divide is not so clear, but among this age group there are, also, many asymmetries in terms of content-oriented digital skills, which show how simplistic metaphors such as digital native are, as this approach cannot describe the variability of young people's digital practices.

“At the beginning I told my father the music I wanted and he used to download it. And then, I told myself, ‘I am going to try it’, and that was; actually, he explained me a little bit how it worked and that was all.” (R1. Woman, 1996).

Finally, it is important to highlight that digital literary processes, among our respondents, are closely related to long-term processes of self-capacitation, in which digital skills are progressively acquired in the daily domestication of digital devices in order to carry out ordinary social practices and tasks. This is why we found an informational skills advantage among those youngsters who had early access to digital devices, especially computers, during childhood and adolescence, and also among those whose educational and labour activities are interwoven with the use of digital technologies.

3. Emotional and motivation gap

Two closely interrelated barriers which affect digital practices are related to the emotions and motivations that people experience in their daily use of Internet and

digital devices. Among our respondents, we have found, specifically, two different sets of emotions which can inhibit and condition young people motivations and interest in using digital technologies. On the one hand, we have found that frequent users of mobile devices tend to feel overwhelmed and exhausted because of the ubiquity and continuous connection granted by this kind of equipment. Even if they express how smartphones are an extremely positive tool in terms of communicating and accessing to information in mobility, they also feel that sometimes they are contextually forced to be always online and to rapidly answer every message or communication that they receive. Although this feeling of anxiety in the use of Internet is widely recognised among all the respondents, it is especially relevant among older ones. In those cases, subjects have experienced in their trajectories previous ways of communication with family, friends or work colleagues, and generally feel that something has been lost with the arrival of digital messaging applications such as WhatsApp or Telegram. They lack the spontaneity and contingency of face-to-face communication or even voice calls, and feel overwhelmed because of the felt necessity of answering back as soon as possible once they receive a text message.

“I think that, in my life, everything is more accelerated, I feel myself more hyperactive, because of the amount of information you have to assimilate for 12 hours, at work, 10 or 11 hours, the amount of impacts you have from WhatsApp, mails, web pages, answering, whatever. (...) I come home and if you take my phone, I even feel anxiety of saying ‘everything is quiet’. When I was young I remember it wasn’t like that, you could be disconnected, calm, and nothing happened”. (R10. Man, 1984)

On the other hand, another set of emotions is related to the use of computers, particularly among mobile-oriented users, who do not always feel they have enough content-related skills to carry out the tasks they need to perform. In these cases, most of the respondents feel frustration and stress, and thus conceptualize computer use as a bad personal experience, which is a powerful inhibitor and barrier that prevents these respondents to engage with computer use again. This kind of emotions is more common among women than men, among people with less educational level and, also, among people who do not use computers frequently in their daily professional and private activities. Our findings, regarding these emotional costs, are very similar to the results described by Huang, Robinson and Cotton (2015), who point out that the frustration

and anxiety in digital technology appropriation of most vulnerable groups can feed up processes of self-exclusion of digital technologies, preventing these youngsters to take advantage of the potentialities and opportunities associated to them. In our case, the gap is clear between those subjects who feel comfortable in the use of computers, who can spend time investigating different features of these devices, and those who feel stressed when they have to carry out a task that they do not exactly know, from the start, how can be performed. The first type of digital users can make mistakes and have difficulties in their use of devices, but they feel confident and they will enhance their digital skills in the process of digital appropriation. This group will become much more motivated regarding digital technologies, being able to compensate difficulties in carrying out challenging digital tasks with a strong feeling of self-confidence and a deep attraction and motivation towards these kinds of devices.

“I have many experience with computers, machines, and electronic in general, everything. How to connect it, formatting a computer, etc., for me it’s natural because I have grown up surrounded by machines. Most tasks are like going shopping. Then people called for help, and you can teach basic programming tasks. (...) It’s like a hobby”. (R14. Man, 1985)

On the other hand, the second type of users, more similar to the task-oriented users described by Robinson (2009), feel stressed and frustrated when they confront a difficulty using digital devices, so they tend to self-exclude themselves from the digital sphere and become unmotivated to try new digital tasks, apart from those deeply integrated in their daily activity.

“For me computers are a world impossible to understand. For instance, an Excel sheet, I don’t know how to use it. Well, maybe I could use it, but there are too many tabs, too many options, too many things, and I don’t use it”. (R12. Woman, 1988)

4. Utility gap

This last barrier is related to the third level of the digital divide (Ragnedda, 2017), that is, to the offline benefits and outcomes people obtain from the use of digital technologies. In our interviews, there are two predominant contexts in which we can easily describe the centrality of digital technologies in young people life trajectories and

in their engagement with the social field: information-seeking and communication. Other contexts, such as leisure activities, are also relevant, but information access and communication are the two central points of contemporary people's lives in which digital technologies are utterly integrated.

Regarding information, all of the respondents highlight the importance of Internet and digital technologies for people's access to knowledge and information, both in abstract terms but also in their specific life experiences. Firstly, most of the subjects got their job through the mediation of digital technologies; in some cases, they have used specific platforms oriented to searching available jobs. But in other cases it is just the mediation of social contacts or information-distribution groups that are used to get relevant information associated to working, training or internship opportunities. Secondly, the fact of having the required skills to access to digital information also plays an important role in most of the social practices and daily experiences, and thus the fact of being able to properly use digital technologies is increasingly becoming an important need for activities like shopping, dealing with bureaucratic administration and institutions, organizing trips, using GPS systems and public transports applications to move around, and, in general, using the wide array of services offered by the digital contemporary society. As many authors have stated (Antonio & Tuffley, 2014; Dalvit, 2018; Selwyn, 2004), digital technologies are increasingly and progressively mediating production processes, but also subjects' personal experiences. This is why Internet access is conceptualized by respondents as an essential information-seeking tool, closely interwoven with their daily practices, and sometimes they express that they would not know how to interact with their life worlds without the mediation of this continuous connectivity.

“On the one hand, Internet makes things simpler but, on the other hand, you are not interested anymore in social relationships, in making a phone call or in meeting in a specific place and knowing that you have to be there at a certain time. So, I think it has made things so simple that we are becoming dumb”. (R17. Woman, 1987)

A second context in which Internet have become especially relevant is related to communication and social interaction. In this case, the process of digitalization, and especially the fast generalization of communication mobile devices, has radically changed the ways in which people interact with each other. Among our respond-

ents, several communication tools are mentioned, that are associated with different moments of their past life. This allows us to reconstruct the specific change of digital technologies by describing young people's biographic trajectories. Particularly in the case of older respondents, they have experienced, firstly, that the transition from landline phones to cellular phones, during the early 2000s, changed the pattern of communication with friends and family, when calls became independent from spatial and geographical constraints. Secondly, they also experienced the transition between voice calls and SMSs to the wide variety of forms of communication granted by smartphones, in which text, voice, image and audio are combined, engendering a new form of interaction which is not only independent from space but also from temporal constraints, as long as people can just send a message and wait for the later answer. The synchrony of phone calls is no longer an issue and communication becomes enriched, but at the cost of generating a certain dependency from the particular apps, services and devices which allow these new means of communication. As a matter of fact, some respondents declare that they had their first smartphone in order to keep communication with their group of friends, since at the moment when interpersonal communication moved from phone calls to WhatsApp groups, the access to this app became essential in order to prevent digital exclusion.

"I remember that I started to use WhatsApp because I was in a service in which everybody interacted by WhatsApp, and I was completely out". (R16. Woman, 1982)

"I have noted that since I have WhatsApp my social life has grown up exponentially. At the end, people who didn't use to call you, who didn't send you a message, now can text you on a WhatsApp group: 'hey, what's app with you?' At the end is like generating an extreme sociability, even superficial at some point". (R20. Woman, 1990)

DISCUSSION

In this paper we have analysed the three levels of the digital divide (access, use and utility) that condition subjects' engagement with digital technologies. Through the reconstruction of youngsters' narratives of technological domestication (Silverstone,

Hirscj, & Morley, 1992) of Internet in their life trajectories, we can contest, on the first place, most of the cyber-utopian and homogenizing approaches, such as the digital natives metaphor (Prensky, 2001) or concepts like Net generation (Tapscott, 1998) or millennials (Howe & Strauss, 2000). We agree with Buckingham that there is not just one but various digital generations (2006), which have intensively incorporated digital technologies to their daily life in many different forms, related to their own personal interests, motivations, knowledge, that are conditioned by their specific positioning in the social structure. As Ragnedda (2017) has pointed out, digital divide needs to be seen as a multidimensional social issue rather than a technological one. Our respondents show how even if basic access, analysed in binary terms, is not a problem among them, there are many relevant barriers related to conditions of access (first digital divide), digital skills, motivations and emotions involved in their engagement with the digital world (second digital divide) and, finally, offline outcomes and utility of Internet (third digital divide) are still important gaps that inhibit people to take advantage of all the possibilities associated to the network society.

Regarding access, we have shown the relevance of access quality (Robinson, 2009) and types of devices (Van Deursen & Van Dijk, 2015) used to connect to the Internet. Among our respondents, the classification between mobile-oriented users and computer-oriented users, which is connected with divergent processes of technological socialization since childhood, is useful to understand the informational advantage experienced by people who can use properly different kinds of devices to perform specific tasks (Pearce & Rice, 2013) and incorporate to their life the comparative advantages of all of them in different contexts (ubiquity of mobile devices versus productivity of fixed devices). In terms of skills, we found that medium-oriented skills are more or less generalized among our respondents, who generally express being familiar with the use of digital devices. Nevertheless, there are some relevant gender, educational and age differences associated to content-related skills. We found an important gender digital divide among older respondents, a group in which computer skills are much more commonly expressed among men than among women. Also, we discovered the importance of long-term digital literacy processes, which are associated with people's working status and educational level—because labour market and educative systems are two of the principal institutions that enhance subjects' digital literacy—, but also with personal biographic processes of self-capacitation.

Therefore, we introduce the importance of motivation and emotions experience in people's engagement with technology as both facilitators and barriers of digital

performance. Taking into account the emotional cost theory (Huang et al., 2015) we found how self-esteem and confidence in using digital technologies are key aspects of favouring this process of self-capacitation, whilst frustration, anxiety and lack of confidence can lead to a vicious process of self-exclusion from the digital sphere that enhances digital inequalities (Reisdorf & Groselj, 2017). Finally, we recognised the importance of the outcomes and benefits people ordinarily obtain by using digital technologies. Among our respondents we focused on two dimensions of social life which are extremely interwoven with digital technologies: information-seeking practices and communication. In both cases we observed how technology plays a central role as a mediation tool (Lasén & Casado, 2014) of people's practices, but that it is also conceptualized in ambivalent terms: on the one hand, new devices, platforms and services enhance people's opportunities by granting access to a huge amount of information sources, simplifying bureaucratic practices and enabling new forms of communication which can overcome temporal and spatial constraints. On the other hand, though, digital technologies create a strong social dependency, and thus the exclusion from the digital sphere (in terms of access, lack of skills or motivation) is increasingly becoming a new form of social exclusion, that needs to be taken into account. At this point, we agree with Ragnedda when he states that "inequalities born with the introduction of new ICTs will add to those already existing, in a circular and cumulative process" (2017, p. 21).

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Media Shy: The Perils of Bashfulness in the Digital Age, an Era of Speed, Satisfaction, and Spectacle

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Abstract

Speed and satisfaction are central to today's digital communication tools and online social environments. This article examines how new forms and habits of social communication in digital environments have over time compromised socially timid users as a result of algo-

rithmic design and the commodification of users. An examination of the history of online social environments and their outgrowth, the consideration of social and cultural factors, and self-presentation theory, will be used to frame these arguments.

Keywords: Identity, medium theory, self-expression, self-presentation, social media

Timidez nos Media: Os Perigos do Acanhamento na Era Digital, uma Era de Velocidade, Satisfação e Espetáculo

Sumário

A velocidade e a satisfação são fundamentais para as ferramentas de comunicação digital e ambientes sociais on-line de hoje. Este artigo examina como as novas formas e hábitos de comunicação social em ambientes digitais comprometeram, ao longo do tempo, utilizadores socialmente tímidos como resultado

do design algorítmico e da mercantilização dos utilizadores. Um exame da história dos ambientes sociais on-line e seu desenvolvimento, a consideração de fatores sociais e culturais e a teoria da auto-representação serão usados para enquadrar esses argumentos.

Palavras-Chave: Identidade, teoria dos média, auto-expressão, auto-representação, média sociais

‘Oh, they don’t miss me,’ she said. ‘I’m antisocial, they say. I don’t mix. It’s so strange. I’m very social indeed. It all depends on what you mean by social, doesn’t it? Social to me means talking to you about things like this’ — *Fahrenheit* 451 (Bradbury, 1953, p. 29).

The benefits and advantages of digital media technologies and specifically networked connectivity and engagement are clear: speed, efficiency, and the prospect of doing more with little or no effort are appealing attributes and ways of life, irreversibly changing the ways we buy, sell, educate, learn, and share. However, as we proceed with using these tools with greater speed and arguably less contemplation, we run the risk of automating our behaviors and interactions based on the tendencies or biases of the mechanisms themselves. Perhaps most significant are the ways that socialization, self-expression, and individuality have shifted, allowing new perceptions and ways of being to emerge. New ways of cultivating personal and collective identities and guiding self-expression have been a boon, whereas the disadvantages are much more difficult to calculate or understand. The downsides of our digital world are numerous, though less readily communicated and more nuanced and tedious to gauge, in part because the flaws feel like reasonable tradeoffs for the benefits we enjoy and are unwilling, at this point, to relinquish. However, the aim of this article is to shed light on a particularly invisible disadvantageous group of users and address an issue of inequality that has gone relatively unnoticed but speaks to the ways that new media technologies inadvertently exclude certain groups of people in specifically social contexts to an extent that such groups have little or no recourse. More specifically, this article will focus on how many uses of networked connectivity, particularly but not limited to social media, can be detrimental to users who struggle with shyness and social vulnerability. This is achieved through an examination of the persuasive power of media by design and the commodification of users, which creates preferred or dominant uses that limit or complicate self-expression for this unique group, as well as through a theoretical framework for why and how such media are shaped by and in turn shape these outcomes. This article also addresses what constitutes shyness and how dominant communications technologies shape users through comparisons to other media. Medium theory and aspects of representation, self-expression, social constructs and their effects will be used to frame these arguments.

BIAS AS A PRECONDITION TO ALL MEDIA

One of the most fascinating realizations about media is that they are inherently biased toward various outcomes based on the qualities and character of their attributes. Medium theory holds that the form of a message — the features, and indeed the

structure, that make up the channel through which a message is transferred — is as important to understand its meaning and significance as the content itself. Communication theorist Harold Innis situated his studies within this theoretical framework, writing, ‘a medium of communication has an important influence on the dissemination of knowledge over space and over time and it becomes necessary to study its characteristics in order to appraise its influence in its cultural setting’ (1951/2008, p. 33). His observations primarily concern the material components of a medium, such as its weight, durability, or mobility. For example, ‘writing on clay and on stone has been preserved more effectively than on papyrus’ (Innis, 1951/2008, p. 33), which, for Innis, makes these durable media biased toward time: stone and clay will inevitably outlast papyrus. Additionally, we could add that a newspaper, though short-lived by comparison, is biased toward space: its lightweight and inexpensive qualities make it accessible to a wider audience, and therefore its larger reach increases its impact among users. While Innis’s theories center on the transfer of knowledge, what we can take from that term is a more general and thus more sizable understanding of what might be more accurately referred to as simply information: alphabetic text, numeric text, moving images, still images, and so on. His findings confirm that a medium’s characteristics play a sizable role in shaping meaning and the ways one might interpret the information being transferred. Moreover, users transform their habits, values, ideas, and identities based on the types of media that define their era. He continues, ‘immediately we venture on this inquiry we are compelled to recognize the bias of the period in which we work’ (1951/2008, p. 33). Neil Postman later echoed this sentiment, stating, ‘ff course, like the brain itself, technology has an inherent bias. It has within its physical form a predisposition toward being used in certain ways and not others’ (1985, p. 84). Naturally, the ways in which media are used affect the types of users using them.

The dominant medium today is the Internet and, more specifically, channels of social media, such as Facebook, Instagram, YouTube, Twitter, and so on. The biases toward lasting power and reach have been combined within their exchanges, and while this may seem somewhat inconsequential, especially as our modern world hosts numerous types of enduring media within and outside of networked environments, these biases are influential in themselves, regardless of the medium’s content, and are default attributes to the media that dominate the present era. The crucial aspect of Innis’s theory is the consideration of how information is disseminated within societies

and how those exchanges transform them. Today, information is primarily exchanged via networks that promote shareability and exchange through specific attributes of design and programming. The immaterial nature of the digital form has ushered an entirely unprecedented bias of manipulation and control that favors certain users' behaviors and interactions over others in discreet but powerful ways. One noticeable shift is the desire for speed and convenience as two driving forces behind not only digital media design but also the ways that users engage both media and content. Google, the world's largest internet search engine, is an example of the downsides of designing for speed and convenience or relevance. With its gargantuan, unbreakable hold on users, especially in western societies where it originated, it operates through a complicated (and publicly undisclosed) calculated system of information retrieval, whose highly classified algorithm favors speed and advertising revenue over veracity and equality. Many have reported on algorithmic bias, for example, and the influence that large internet platforms like Facebook and Google had on the 2016 presidential election in the United States, during which they allowed the dissemination of targeted and incendiary messages to circulate for the purpose of swaying public opinion on various issues. 'For the makers of algorithms, the term refers specifically to the logical series of steps for organizing and acting on a body of data to quickly achieve a desired outcome' (Gillespie, 2016, p. 19). These programmed commands enact underlying values of the system: rapid information retrieval is one, and perhaps a second is popularity or relevance of content measured by trends and potential favorability.

The persuasive power of algorithmic design mainly lies in its surreptitious management of information: it is embedded in our systems — Google and beyond — and thereby hidden. An additional emergent bias is automation which, according to Lev Manovich, allows for a situation in which human interactions can 'intentionally be removed from the creative process, at least in part' (2001, p. 53). However, it is worth adding that automation also creates a template or model for human behaviors, which can serve as a creative substitute in the interest of convenience even when human agency is left intact and, as in the example previously mentioned, can dissuade users from critically thinking about how information is disseminated: automation discourages contemplation.

AN EMERGENT BIAS TOWARD SHARING

Sharing is the basis of the internet and is ‘an important digital keyword not only because of its roots in computing (time sharing, disk sharing, file sharing, etc.), but because it bears the promise that today’s network and mobile technologies —because they make it easier for us and encourage us to share extensively — will bring about a better society’ (John, 2016, p. 270). The origins of digital society and its subsequent ideological values emerged within ARPANET (Advanced Research Projects Agency Network), the precursor to the World Wide Web, which formed in 1968/69 and set the stage for the web communications dynamic we presently utilize. There was evidence from its infancy of the great potential to not only conduct basic communication but also to build a virtual environment that promoted deep social ties among complete strangers. Digital networks have the unique advantage of allowing (semi) anonymity among users, helping alleviate superficialities and social barriers associated with the physical world, advancing a new understanding and practice of connection between actors, and in fact, creating an advantage for anyone inept at easily interacting with others in the physical social sphere. In person-to-person social settings we customarily evaluate one another based on appearance, vocal inflection, clothing and hairstyle, and more culturally nuanced attributes, like whether one is quick-witted and gregarious. By contrast, the first online communities of the 1990s gathered in chat rooms through services like America Online and CompuServe, and though it’s unfair to idealize this time period and the kinds of services offered, at least their social aspects favored the user whose ideas could be ‘socialized’ merely through type without the social pressures of a visual or audiovisual performance in person. Media theorist Dana Boyd echoes this sentiment:

‘When I embraced the internet as a teenager in the mid-1990s, I was going online to escape the so-called real world. I felt ostracized and misunderstood at school, but online I could portray myself as the person that I wanted to be. I took on fictitious identities in an effort to figure out who I was. I wasn’t alone. Part of what made chatting fun in those days was that it was impossible to know if others were all that they portrayed themselves to be’ (2013, p. 38).

Initially, being online meant that you were judged based primarily on what you typed, as the systems only utilized text-based inputs. Images, videos, graphics, and

links were not yet supported on the first chat systems, and it was also common for users to select handles, or usernames, that bore no resemblance to their personal names, allowing them to form new personae as desired. Without such personally distinguishing details like names and photographs, other characteristics that provided a connection to one's physical form — age, gender, race, and physical appearance — weren't factored into one's personality profile by default. This afforded a certain level of removal or dissociation from one's physical self, and the chance to selectively conceal and reveal information as fancied. Moreover, nervousness, discomfort, and awkwardness brought on by person-to-person interactions were abetted, or at least hidden, and therefore were invisible to recipients. In these chat rooms, certain pressures of the physical world could be momentarily suspended to offer a respite for the shy and socially awkward. It is worth adding that shy types could in fact flourish in these environments given the unique affordabilities of the medium, which have dramatically shifted in recent decades toward establishing a connection to one's personal and physical life and restoring some of the social expectations of physical socialization through images and other media.

Today's digital sphere, ushered by Web 2.0 — a kind of redesign of the original World Wide Web — highly depends on social media that places sociability, not merely connection, at the center of most all digital communication, initially as a means to democratize the internet. According to Alice E. Marwick, 'Web 2.0 celebrated the adoption of social technologies as a precursor to a better, freer society, and framed the collection and sharing of information as the bedrock of revolution' (2013, p. 22). Social media is a broad term that refers to 'a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content' (Kaplan & Haenlein, 2010, p. 61). These user-friendly web platforms thrive on what has become known as an economy of sharing, a system that is dependent on the contributions of billions of users who have grown accustomed to sharing personal details, images, and ideas. A byproduct of sharing is the notion that social relevance is tied to lively activity and contributions by participants. Social media, though divided by various dominant global platforms like Facebook, Twitter, Snapchat, and Instagram, have in common an emphasis on communities defined by users, followers, and lively activity that is connected in explicit ways to users' physical forms and personal lives. Facebook, for example, was created for the purpose of virtually connecting physical communities: users know

or knew each other in person, and eventually a web of strangers linked by common friends emerges. While it is customary to follow strangers on these platforms, the assumption is that users' contributions are somehow connected to their personal and physical lives. For the most part, meeting in person is not the end goal and in most cases it is impossible.

In addition to text, each of these platforms supports still and moving images, audio, web links, and graphics. It is not only accepted but highly expected that users contribute with images of their friends, family, home environment, and themselves, hence the dawn and immense popularity of the selfie, a 'type of digital self-portrait [that] is taken with a mobile phone and characterized by its ubiquity' (Wendt, 2016, p. 7). Moreover, these platforms favor quantity: members of communities (groups, followers) and their contributions (posts, likes, shares) are measured metrically and displayed visually, making explicit a numerical system of acceptance or disapproval, which is also archived for all to see and use as a tool of social evaluation. Finally, this emergent public sphere is cloud-based and ever present and, in that sense, dominant and inescapable. In addition to individual profile accounts, users often create professional profiles as do businesses and celebrities, adding tremendous commercial value and expectations to this social sphere.

SOCIAL PERFORMANCE AND SELF-PROMOTION

The significance of the social strata between early web chat rooms and today's social media is deeply tied to self-presentation, the behaviors and attitudes we present to one another in public. Media introduce interesting opportunities both for 'performing' and for social relations to take shape. As Erica Pearson asserts, online 'the audience and the performer are disembodied and electronically re-embodied through signs they choose to represent themselves' (2009). However, one could argue that the choice to engage such signs of personal preference are in rapid decline as a dominant mode of discourse presented by the use of personal images, confessions, and other ties to the physical world and identity has formed within social media, disparaging most alternative modes of communication. It has become increasingly clear that the social construct of social media reinforces habits and precepts of the physical social space to which the digital space felt strikingly dissimilar at one time, making

the online social space of the present a more convenient and placeless substitute for a physical one, and bringing with it the attitudes and social mores that burden the socially awkward. A number of factors contribute to them, not least the ways that we behave in social groups and how we present ourselves to others. Appraisal and upward mobility are essential aspects of socialization, and a mix of cynicism and sincerity, according to Erving Goffman, help foster a bit of harmless self-illusion (1956, pp. 12-13), thereby benefiting the social actor. However, social performance precedes the internet and exceeds media communication as well.

As Goffman notes, ‘performance’ should be understood as ‘all the activity of an individual which occurs during a period marked by his continuous presence before a particular set of observers and which has some influence on the observers’ (1956, p. 13). The observable components, what Goffman calls the ‘front’, include the setting, appearance, manners, clothing, and more of the individual (1956, pp. 13-19). The ‘front’ is composed of characteristics that are impossible or difficult to conceal in physical situations but are, to some extent, obscured or partially hidden through media. For example, the telephone discloses the sound and character of one’s voice but conceals his/her appearance and physical surroundings, while the written letter cloaks all but one’s written ideas and penmanship. Online, typed text replaces handwriting, and image-based communication largely replaces the use of our voices in interpersonal communications. With this in mind, it would seem that the development of various personae in such seemingly inventive spaces could free one from the constraints of social awkwardness since, returning to Pearson, ‘the mediated nature of these spaces means that most information about the virtual self and its place in the network is given through deliberate construction of signs, linking back to this sense of online self-consciousness’ (2009). Theoretically, the freedom and ability to essentially invent oneself within these social spaces is possible through careful selection of signs and omission of undesirable personal attributes. In this sense, online social space is a tabula rasa that fosters a sense of imagination and self-expression. However, in practice, mainstream social media spaces are designed with different outcomes in mind, thereby suppressing certain behaviors and uses.

While social presence, along with self-presentation, precedes online and exceeds media communications, it’s a key factor in how we might understand social media engagements today and the users that falter within it. Social presence is the ‘acoustic,

visual, and physical contact that can be achieved' between two social actors (Kaplan & Haenlein, 2010, p. 61). A close idea to this is media richness, which is 'based on the assumption that the goal of any communication is the resolution of ambiguity and the reduction of uncertainty' (Kaplan & Haenlein, 2010, p. 61). Social media are designed to promote a high degree of social presence and media richness, meaning a high degree of self-disclosure, in which one consciously or unconsciously reveals personal information that is consistent with the image one wishes to project (Kaplan & Haenlein, 2010, p. 62). These media theories draw on Goffman's ideas about self-presentation and performance: we desire to communicate thoroughly and accurately while presenting the finest version of ourselves to our publics. These appear to be optimal conditions for the shy person's dilemma, however what is missing from these observations are the downsides of social media engagement based largely on their design and subsequent influences on individual behavior resulting in the encouragement of self-promotion of individuals toward a kind of redirection of ideas.

Moreover, as Marwick argues, social media are 'predicated on the cultural logic of celebrity, according to which the highest value is given to mediation, visibility, and attention' (2013, p. 14). As in the physical world, users are influenced by one another and the kinds of messages and content posted, setting the tone, standards, and other various criteria for acceptable contributions, sometimes at the expense of sincerity. The desire to fit in and feel popular drives such behaviors, but the platforms themselves also encourage and discourage certain behaviors based on their designs' affordances and limitations. As Christian Fuchs observes, 'competitive social media foster the branding, quantification, marketization, commodification, capitalization of the self' (2017, p. 36). They do this by design: users accumulate likes, followers, commentary, shares, and other forms of publicly displayed, quantifiable attention, which promotes behaviors aimed at increasing one's status within these media channels, and thereby keeps users returning (or never leaving) the platform. The incentive to participate operates on multiple levels: users are encouraged, by design, to contribute repeatedly, but they are also encouraged by fellow users to continue contributing after experiencing an endorsement, further cementing their popularity. However, it is important to note that information in these channels operates under a hidden algorithmic bias: the system rewards popular users and their content, and essentially punishes — through low-visibility or absence altogether — unpopular users and their content. 'Facebook notoriously curates the user's content for them while allowing only a modicum of

configurability within the larger parameters of the platform' (Pettman, 2016, p. 79). Within this space, the content located in one's feed is the central driver of information and ultimately influences users within the social space and their opinions of other users. With this in mind, popularity and shyness have never been more explicitly linked than they are in social media exchanges. Additionally, the increasing concern is that we are becoming slaves to the hidden operations of the algorithms, allowing these biases to go deeper than the branding of the digital self, as stated previously, whereby a sensationalist tendency is being built into the systems themselves. 'Social media is inherently libidinal to the degree that we participate in it in order to be recognized, endorsed, verified, or, if one is more a voyeur than an exhibitionist, to find objects of cathexis and fetishism' (Pettman, 2016, p. 108).

Because algorithms favor lively activity, meaning the content that generates more likes and attention generates more generation and more attention, we inherently seek to succeed as social actors in this system by contributing potentially more enticing and likeable content. This recalls the influence of automation mentioned earlier in this article. While social media users hold a considerable amount of agency, patterns and trends inevitably emerge from these platforms as it becomes clear what kinds of posts gain the most popularity, require less time and effort to construct, and thus achieve (programmatically speaking) more visibility on a platform. Moreover, social media contributions by individual users also compete with contributions made by advertisers, celebrities, and other professionals, setting a social standard that dramatically deviates from the modes we learn to engage in the physical world among local communities and, more significantly, favoring content conducive to extroverted users. This leaves many introverted and self-conscious users bereft of ways to effectively socialize in the digital social sphere.

THE SHY-BOLD SPECTRUM

In his book 'Shrinking Violets: The Secret Life of Shyness', Joe Moran refers to the shy-bold continuum, a spectrum of behaviors that register somewhere between apprehensive and modest (shy) to audacious and heroic (bold) among animals. Animal behaviorists and zoologists use this to examine various traits along the spectrum to study how animals socially network, organize, reproduce, and survive. Moran sug-

gests there might be a spectrum among humans worth examining, though he admits our behaviors are too nuanced and our situations too varied to classify them in this reductive way. However, it seems possible to utilize this spectrum to evaluate the qualities of a particular medium with respect to how it affords and limits various behaviors and actions among users. Though shyness is difficult to define beyond the desire or tendency to withdraw from social situations, Moran says it can also ‘amount to an undue interest in others, a desire for human connection that defeats itself through anxiety and uncertainty’ (2016, p. 1). Despite the subjectivity of shyness and the ways we use communication tools, the affordances and limitations through the design of various media undoubtedly shape the ways they are used. Dominant methods inevitably arise, regardless of which groups find themselves stumbling to master them. While shyness is by no means synonymous with weakness, the key to success for the socially sheepish in today’s online social sphere is a feeling of agency, which is dwindling in today’s digital media design as content that communicates sheepishness, and with that often contemplation and thoughtful intention, is ignored while its bolder, faster, and more spectacular counterparts are rewarded.

Given how easy it can be to assign (especially new) communication technologies a *sine qua non* designation without much consideration of merit or potential drawbacks, it is imperative that we examine these forms of persuasion in their affordances and limitations, which promote certain behaviors and applications over others. For the shy individual, media tools can both establish a haven for easy communication and a daymare of arduous delivery and lack of connection. As previously stated, media can shield certain personal attributes that would otherwise increase anxiety for the socially shy, but the design and popular uses of today’s media favors the sharing of personal images and private details regarding daily life, making it difficult and at times socially unacceptable to deliver more nuanced or differently engaged messages. When one is too shy to articulate one’s feelings publicly, even semi-publicly, social comfort is often found in less popular or secondary media, because under the right conditions, the socially timid can find ways both to express themselves and effectively fraternize, as discussed earlier with regard to chat rooms.

With this in mind, it seems that media have their own shy-bold continuum. For example, a published book will reach a certain public that includes friends, family, acquaintances, and strangers. Likewise, a tweet will reach one’s followers and has the

potential to be retweeted, screenshotted, or otherwise disseminated to those outside one's social network. In many ways the published book and the tweet are similar -- both placing the work in front of friends and strangers and experiencing some kind of longevity -- but the former can be said to relieve shyness while the latter heightens it. The printed word, more definitive in its ability to withstand the test of time and distance, can feel less aggressive than a tweet, even though, with few exceptions, the latter will get buried in the continuous stream of incoming messages after a day or so given the volume of content Twitter users generate. It hasn't always been this way, but in the digital age, the printed word allows for a kind of delayed boldness, should there be any. The message can be high-impact, but its effects are comparatively incremental and cumulative. Physically printed messages require more time, effort, and reflection to decipher and react to. The message in a tweet, on the other hand, can seem to be more high-impact than it is, simply based on its means of delivery, which is one that is conducive to immediate response and a penchant for novelty, speed, and spectacle. Each form attracts users across the shy-bold continuum for different reasons, but the former can be said to have medium properties that favor the apprehensive and modest, while the latter can be said to indulge the whims of more courageous users. The latter is a shout while the former is more of a whisper or gentle nudge: both are in their own ways effective modes of self-expression, but the book is increasingly overlooked and deemed irrelevant to be as socially effective compared with the tweet.

Much of this has to do with the desire for convenience and efficiency. The tweet and other content located within streams are intended to be brief and succinct, while the longer formats -- articles, books -- require more time and attention to consume and decipher. That our attention spans have shortened over time is a criticism that has been debated, but there is evidence to suggest not that we have lost the ability to spend quality time and attention on various messages but that our tools do not require it and therefore urge us not to. 'When our responses are preempted and shaped by the protocols of the network -- "only 140 characters... only 'like' button... only memes or emojis accepted" -- then our critical faculties start to follow the same subroutines of the algorithm' (Pettman, 2016, pp. 120-121). Contemplative, unique responses are discouraged and uniformity and repetition sets in, which damages the potential for creativity and self-expression, as well as sets a standard of social discourse that edges out any outliers among its user base. The introspective approach does not fit into this social scheme, and the online social world begins to take shape

through predictable fragments. It is a different way of thinking about Innis' theory about media's bias toward time: today's media are biased toward the amount of time required to send, receive, and decipher a message rather than the amount of time the message will endure.

SELF-EXPRESSION IN THE DIGITAL AGE

However, the question of time is not the only factor to consider: a rising interest in imagery, particularly as a means of self-expression, increases with these platforms. Presently, the biggest and most consistent trend on social media is the creation and dissemination of selfies. A modification of its predecessor, the self-portrait, the selfie assumes an attitude of informality and experimentation rather than contemplation and singularity. 'It was perhaps unforeseen that people would generate an astronomical amount of selfies and that our desire to capture and share selfies would become a global phenomenon' (Wendt, 2016, p. 7). The reasons for it are unquestionably tied to the fascination with and wonder of the self, a human trait that dates back centuries through experiments with glass and metallurgy that produced the first reflective surfaces and thus the first images of the self. The self-portrait took this contemplation further to produce objects, mobile versions of our likeness, in paint and eventually photography. The modern subject is a by-product of these experiments and practices, as we continue to look inward to question, study, and enjoy. The selfie is an extension of this, in many ways engaging the philosophy and stance of the first users of chat rooms and the way they valued their new online social spaces: selfies are casual, imperfect, and repetitious. Users do not limit themselves to one, rather allow the selfie to be the locus of a particular message, a means of expressing one's thoughts or reflections at various times and situations. Because of their popularity and their emphasis on the individual user, the ongoing criticism is that selfies signal a sociological problem of rampant narcissism or other disorder of self-indulgence. However, they are undoubtedly a mode of discovery, self-expression, and a respite from daily life. Drawing on Marshall McLuhan, Wendt writes, 'by gazing upon our reflections, we receive momentary relief from stressful situations or personal anxieties – a break from reality. We are amplified by this process and therefore receive satisfaction from capturing and viewing selfies' (2016, p. 8). With this in mind, selfies underscore the values of the early web and its social domains, advancing performative opportunities and the enactment of various personae. However,

because platforms like Instagram and Facebook encourage followers to like and comment on our posts, selfies are subject to the scrutiny of popularity and qualities of social acceptance. As Wendt observes,

As we tilt, raise, and lower our smartphones to find the best angle of ourselves on screens, we build perceptions about ourselves that are constructed purely from within screens. Instagram, thus, is not just a way to produce images but it is also an active means for some people to establish their identities – viewing the ubiquity of their selfies as a mark of distinction (2016, p. 7).

Distinction is an interesting term here when, in reality, selfies are deeply coded as best practices have emerged as guideposts toward ensuring successful, meaning socially acceptable, image captures. Wendt continues, noting how ‘one can witness the power of this spell upon society in several YouTube tutorial videos titled “How to Take a Selfie”’ (2016, p. 8). It isn’t new that a formula has developed around how to take selfies (and profile pictures), but the scale and conditions around which selfies have become and remain popular make them an important means of socializing and demonstrating not so much individuality and self-expression but community and belonging.

Another obvious downside to selfies as a means of expression for the debilitatingly shy is their content: selfies are displays of the visible self. Regardless of filters, editing software, and other forms of manipulation, they are inherently troublesome for diffident users. It seems that this argument may go against McLuhan’s idea that the medium is more considerable of a culture than the content of the message ‘because it is the medium that shapes and controls the scale and form of human association and action’ (1964/1994, p. 9). However, with regard to selfies and social media, the selfies are the message, meaning the selfies are a kind of micro medium. That this form of content has its own label is one reason to treat selfies as a sub-medium. In that sense, one can borrow and slightly adjust McLuhan’s argument to better understand the impact of the selfie. He writes: ‘In terms of the ways in which the machine altered our relations to one another and to ourselves, it mattered not in the least whether it turned out cornflakes or Cadillacs’ (McLuhan, 1964/1994, pp. 7-8). Likewise, the message is the selfie itself, not the individual who appears as content, or the context in which the individual appears.

But there is another aspect of selfie taking that gives the reflective individual pause. One criticism was made by Peter Conrad, who lamented,

The selfie is the perfection of solipsism: we assume that the rest of the world will share our high opinion of ourselves, and don't allow for the possibility that we might be viewed more sceptically. Obsessed with who we are, we forget where we are; rapt in self-consciousness, we squander our chance of attaining self-awareness (2016 p. 106).

This comment advances the idea that inveterate selfie takers are self-absorbed, but so much so that they fail to fully achieve self-awareness. According to this argument, the act grossly misses the potential and purpose of intentional play, experimentation, and personae-making. In fact, it concerns a more serious problem of mindless habituality and synchronization. Like the machines to which McLuhan refers, there is a kind of automation that is at work within the social media landscape. Cornflakes, Cadillacs, and other banal and worthwhile content alike stream through each user's feed. Regardless of content, the message is the stream and, oftentimes, the selfie. To socialize in this realm, one must add a contribution to the stream, like making an announcement in a crowded room. Unlike a crowded room, however, when no one hears your voice, that oversight is not publicized. Social media platforms display this information, noting just how many followers endorse your message, which requires more than simply hearing/seeing it. With this in mind, the selfie is the dominant mode not necessarily of self-expression but of self-presentation. It is a mode of digital presence, the baseline upon which other evaluations are made. Omitting this starting point, as a shy person might want to do, is like not showing up at the party at all.

Though there are differences among social media platforms, they each determine lively activity through engagement and reach, which allow and confirm that a user has enacted sociability. It is the platform's way of materializing sociality, to give it a form, but it is also a means to quantify it, as each platform's counter indicates. The number of endorsements (likes, shares, etc.) is visibly published for this very reason, creating a kind of popularity forum or, more crudely, a stage upon which one performs to encourage popularity. This aspect of social media is indicative of a significant shift away from the quality and character of the content, and toward an emphasis on the medium itself. Such behaviors and characteristics support conditions condu-

cive to spectacle and the commodification of users rather than merely demonstrate self-expression. There is a sense that participants are engaged in acts of self-branding, extending the nature of performativity in everyday life described by Goffman. Individuals are quasi products in a system that advocates the promotion of one's appearance, opinions, status updates, and so on. Public endorsements and social follower counters are features that are unique to this environment, and there is no learned protocol for how to manage them except to attempt to reach higher numbers. This follows a business model rather than a human social one, turning our social spheres into popularity contests for the best products, or most effective users. McLuhan's assembly line metaphor returns as we adopt machine-like actions to produce ever more content: the message is the assembly line, not the content itself.

OBSERVATION AND THE COLLAPSE OF PRIVATE AND PUBLIC SPACE

The internet, which is for many the dominant social sphere of interaction, confuses private and public space. As José van Dijck observes, 'today, this layer of platforms influences human interaction on an individual and community level, while the worlds of online and offline are increasingly interpenetrating' (2013, p. 4). Fuchs adds, 'the boundaries between public life and private life as well as the work place and the home have become porous (2017, p. 50). Using the glass bedroom as a metaphor, in which a once private space becomes somewhat or entirely public, Pearson says our online social spaces require 'willing and engaged participation in mediated exchanges' (Pearson, 2009). As in the physical world, we observe each others behaviors in social exchanges. Online, those exchanges are mediated, and therefore abstracted and archivable. The abstracted aspect is critical, because it means the coded information is drawn from its physical-social counterpart but is nonetheless a fragmented interpretation of it and therefore demonstrative of a system that in many ways operates independently of our in-person social exchanges. This could be beneficial to users. As Dana Boyd observes among teens, 'paradoxically, the networked publics they inhabit allow them a measure of privacy and autonomy that is not possible at home where parents and siblings are often listening in' (Boyd, 2014, p. 19). The same, perhaps, could be said about letter writing or in some cases telephone use. Mediated social exchanges can sometimes allow privacy from physical publics. That information exchanged through social media platforms is archived (creating a bias toward

duration), even momentarily, but almost always exchanged in real-time (creating a bias toward immediacy) also is significant: one can refer back to a message at another time or context, imbuing it with potentially new meaning, which can be ignorant of the temporal space in which it was articulated. Compared to letter writing, which also allows one to write one's thoughts and creates the opportunity for duration and contemplation at a later time and place, the intended audience is often limited to one recipient, rather than a network (public) of friends, peers, and strangers, and the conditions in which the content of a letter is created, in most cases, is not imparted with immediacy, which encourages informality and lowers the formal protocols that help guide social exchanges. Moran acknowledges that this happens in person as well, in situations that encourage so-called small talk, noting, 'the real problem comes with informality, in casual encounters when conversations are meant to form artlessly, as if out of thin air' (2016, p. 2). Social media is conducive to the flow of artlessly formed chatter because it encourages real-time exchange and rewards charm, humor, and fearlessness, traits that the socially shy long to possess. Mistakes can and are frequently made within this space of cursory social engagement, but the socially courageous respond effortlessly: like falling awkwardly in public, the socially timid retreat ever further into their shells after a social blunder. And in an age in which online exchanges are imperative, it is difficult to avoid the online social sphere altogether. Moreover, Pearson adds, 'whilst it is true that users can lurk, even watching a performance constitutes a form of engagement. Users who refuse to watch, refuse to perform themselves, as a result see their own bonds atrophy' (2009). Passively watching online mirrors the shy person's actions in a physical social setting: the wallflower is the loner who is present but not actively engaged. In person, this could be assuaged by a small gesture — eye contact, a laugh, or a smile. Online the same is true: the digital equivalents of such small physical gestures are the 'like' or 'share', but in the physical realm one's social acceptance is not quantified, shared, and archived. Both successes and failures are much more nuanced and intricate in daily interactions.

The biggest difference between physical and online sociality is, again, the algorithmic determination of what happens to the users deemed wallflowers. Social media platforms are algorithmically calculated to optimize for time spent on the platform, which increases advertising revenue. In a crowded stream of users, the popular posts are contributed by popular users. The algorithm recognizes that users with more followers will reap the rewards of more engagement, while users with smaller followings

and less frequent contributions literally get lost in the stream, mathematically pushed aside. This caters to marketing logic that favors reach and user feedback, which creates an algorithmically, rather than organically, determined hierarchy within the social sphere. While Facebook has been making tweaks to its algorithm after heavy criticism about its bias toward popularity, the changes remain hidden from users, and besides, the strength of popular users has already been publicly established, making it difficult to challenge this trend in a meaningful way. Additionally, the established methods of posting, commenting, and sharing in particular ways are mimicked by users who witness the rewards (through data analytics) of successful behaviors.

We observe how others behave and how others respond to such behavior: this is true on- and off-line. Observation online, however, is particularly calculable not only through designed elements afforded by various platforms, as previously discussed, but also through mediation itself producing a kind of observer effect. Online, especially via social media channels, we make adjustments to our behaviors based on the visible (and quantifiable) effects we observe and each medium allows enough distance or removal to construct suitable, meaning socially acceptable, personae. The immediacy engendered by such interactions creates comparatively raw and unfiltered content, mimicking in-person conversations, but this content dramatically differs in its staged calls for approval: the measured endorsements, or lack thereof, require targetable action/inaction, well beyond an in-person gesture. While these mediated exchanges can, therefore, encourage the cultivation of multiple personae, they discourage certain kinds of behaviors. In other words, users are not free to enact shyness in these exchanges; shy users are free to be anything else.

CONCLUSION

It was only a matter of time before social activities would shift to the virtual space of timeless- and placenessness, ushering a new convenience for socializing and communal activity. We engage friends, family members, acquaintances, colleagues, and strangers in fragments, sporadic interactions involving images and short threads of text that theoretically could cushion one's social awkwardness but in fact exacerbate it. The unspoken expectation is one of social bravery and fortitude: for the most part, private is public and audaciousness is celebrated. The advantages among users are not

equal and, moreover, there is no formal training for how one may be fully and successfully socialized in these spaces, nor is there reasonable removal from them, given their virtuality and persistence, and therefore no form of relief, without intentionally removing oneself from the spaces altogether.

The socializations of these spaces, however, are unique and are not translatable from the person to person exchanges they attempt to imitate. As Allucquère Rosanne Stone notes 'social rules do not necessarily map across the interface between the physical and virtual worlds' (1995, p. 80). Content within virtual spaces competes for attention in a stream of images and text that populate their platforms. In this way, they favor brassy commentary and imagery that startles the senses, permitting the momentary disruption of the flow of content to achieve a successful outcome. Blog headlines, Facebook posts, Instagram images, and similar platforms are conducive to the ostentatious displays of communication. In this sense, they share the qualities and techniques of paid advertisements, creating a visual and tactical bleed between personal and professional posts in a continuous stream of content. But this general effect is not limited to social media. Video chat applications, like Skype and FaceTime, literally require one confronts others visually, but unlike person-to-person communication, videotelephony provokes social awkwardness through its latency of audio signals, a common problem among each of these platforms regardless of internet speed, grainy video, and irregularity among user set-ups. While these technical issues are merely inconveniences that do not reflect the users' abilities directly, they interfere with the progression of conversations and contribute to unnecessary misunderstandings, which are conditions that can be debilitating for the shy. These tools, in addition to images like selfies, literally show the user and require a demonstration of confidence and self-assurance. Additionally, one cannot ignore the observation aspect of our online social sphere, which is a more complex activity than merely seeing one another in real-time, and instead enables users to record, replay, and share such interactions. In this sense, unique behaviors are not meant to thrive in these mediated environments, rather we are encouraged to learn best practices in order to succeed within them.

Media tools can both ameliorate and exacerbate shyness or timidity among users. The parallels and intersections between media and shyness are revealed through the ways that the former engages the ability to conceal and reveal information with

a sense of agency, and provide the opportunity for the user to perform accordingly. Some flexible features and customization of our tools, such as various privacy, visibility, and activity settings, can help give users a sense of control. However, if these options are hindered, based on preferred uses by a majority of the members of the group and the systems that impede alternative interactions, agency for the outsider is compromised and the options are rendered pointless. Awareness of these issues is key to all users, shy and bold alike, who have the agency to shift the social discourse away from the preferences toward highly sensationalized content users favor and the system encourages. With these important issues in mind, alternative uses and platforms can and should emerge.

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Utilization of Digital Literacy in Retirement Planning Among Ghanaian Formal and Informal Sector Workers

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Abstract

The paper investigates formal and informal sector workers' dependence on digital and non-digital literacy sources and their attendant helpfulness in the process of retirement planning, using qualitative and quantitative datasets. The results show that workers use hybridity of digital and non-digital literacy artifacts in obtaining retirement planning information. The users of non-digital literacy can be termed as the socially excluded from digital space use. These are discussed focusing on uses, functioning, capability, and agency. Digital literacy facilitates retirement planning information access through enhanced media and other literacies and associated competencies, skills, and dispositions, while retirement planning offers

opportunities for obtaining the requisite information with implications for social inclusion. A Cramer's V test of 0.705 indicates a strong association between retirement planning information sources and helpfulness. Comparatively, more formal sector workers are exposed to, and/or users of digital artifacts and literacy due to their nature of work and are thus digitally literate with implications for inequality considerations. This may have consequences for increasing disparities in retirement preparation. Intensification of retirement planning may be aided through greater digital literacy in the future hence salvaging the relatively invisible social groups such as informal sector workers in the digital age.

Keyword: Workers, retirement planning, information, digital literacy, digital capability

Utilização da Literacia Digital no Planeamento da Reforma nos Trabalhadores nos Sectores Formal e Informal no Gana

Sumário

Este artigo investiga, através de um conjunto de dados qualitativos e quantitativos, a dependência dos trabalhadores dos sectores formal e informal das fontes de conhecimento digital e não digital e a sua utilidade nos processos de planeamento da reforma. Os resul-

tados mostram que os trabalhadores utilizam o hibridismo de artefactos de aprendizagem digital e não digital na obtenção de informações para o planeamento da reforma. Os utilizadores de conhecimento não digital podem ser designados como socialmente ex-

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cluídos da utilização do espaço digital. Estes são perspectivados através do enfoque nas utilizações, no funcionamento, na capacidade e na agência. A literacia digital facilita o acesso às informações necessárias para o planeamento da reforma através de media sofisticados e outros conhecimentos e competências associadas, enquanto o planeamento da reforma oferece oportunidades para a obtenção de informações necessárias para a inclusão social. O teste V de Cramer de 0,705 indica uma associação forte entre as fontes de informação do planeamento da reforma e a uti-

lidade. Comparativamente, os trabalhadores do sector formal estão mais expostos a, e/ou são usuários de artefactos e literacia digital devido à natureza do seu trabalho e assim são mais digitalmente instruídos o que tem implicações em termos de desigualdade.

Isto pode ter consequências no aumento das disparidades na preparação da reforma. A intensificação do planeamento da reforma pode ser auxiliada no futuro através de um maior conhecimento digital, resgatando assim grupos sociais relativamente invisíveis, nomeadamente os trabalhadores do sector informal na era digital.

Palavras-chave: Trabalhadores, planeamento da reforma, informação, literacia digital, capacidade digital

INTRODUCTION: RETIREMENT PLANNING DYNAMICS

Retirement planning relates to the various preparations of workers in anticipation of post-retirement life (Agbobli, 2011). This requires financial knowledge, which facilitates the understanding of key retirement planning concepts, including informed decision-making (Worthington, 2005). Sun et al. (2007, p. 57) asserted that personal retirement planning behavior is a function of access to investment information albeit from digital literacy sources.

Financial education prioritizes advancement and achievement regarding retirement preparations. However, financial illiteracy may stunt people's ability to save and invest for retirement, undermining their well-being in old age (Lusardi & Mitchell, 2007, p. 14). By definition, financial education is:

the process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction and/or objective advice, develop the skills and confidence to become aware of (financial) risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being and protection (Messy & Monticone, 2012, p. 8).

Similarly, financial literacy is a constellation of awareness, knowledge, skill, attitude, and behavior necessary to make sound financial decisions and ultimately achieve individual financial well-being (Atkinson & Messy, 2012). Financial literacy finds expression in digital literacy.

Buckingham (2015) argues that technology in itself is neither 'good' nor 'bad' for education. It can be both. However, its value depends on how it is used and the rationale for its usage. If combined with broader changes in pedagogy, it can have a significant positive impact. Yet, the central issues have to do with learning. Technological uses vary, for instance, Selwyn suggests that the opportunities presented by mobile technologies for learning are just as much socially structured as they are individually driven, implying that:

... the likelihood of gaining advantage from digital education is clearly related to the resources that social groups command, therefore pointing towards the role of digital technology in the perpetuation of accumulated advantage and the reproduction of inequalities. (2014, p. 138)

The progress of information communication technology (ICT) into all areas of the economy and society has brought dramatic changes, defining entry into the 21st century as a digital age. Further, the development of ICT has caused structural changes entailing the issue of their impact on economic growth, the rise in labor productivity, cost reduction and improvement in living standards. There are many outlooks on the benefits of technology for humanity, and the achievements of the digital economy are accompanied by concerns about future prosperity, the ongoing divide of the world and society based on digital capabilities, and threats to prosperity due to the loss of jobs. The growth economy hypothetically predicts that investment in ICT drives economic growth. However, several empirical studies on the impact of ICT have produced mixed results, being partly influenced by reasonably differing research methodologies with a focus on different countries (Urbančiková et al., 2017).

According to Pahl (2014), the 'stuff' of digital literacies is materialized in smartphones, screens, tablets, and other complex digital literacy artifacts that spill into the 'stuff' of everyday life (p. 173). McDougall et al. (2018) have outlined three main research fields that are a conceptual framework and approaches oriented namely digital literacy, the third space, and uses of digital literacy. The first includes work on the relationship between technology and learning, where learning entails identity work

and civic engagement; the second provides ways of understanding geographies of activity and the blurred boundaries between these territories; and the third provides a lens through which sense is made of the range of things which people do with digital technology (p. 3). Of these, the uses of digital literacy dimension are of significance in this paper. It is in this context that the connection between Hoggart's (1957) notion of 'uses' and Amartya Sen's (2008) notion of 'functioning' is drawn.

Digital literacy implies acting in new ways on information in digital form and through new organizational forms (Aral et al., 2006; Brynjolfsson & Brown, 2005). New technology always plays a key role in discovering and determining new skills considered necessary for its enforcement in the economy. The deployment of ICT technologies in all the sectors of the economy culminate in a new situation that demands broad new skills. Computers have long been regarded as a sole concern, requiring advanced new skills. Later, internet diffusion added significant pressure on the use of further internet literacies. Digital literacy is an "ability to understand and to use information from a variety of digital sources," as required by the new digital age (Gilster, 1997). Further, some other authors argue and consider digital literacy as a special kind of mindset or thinking and not only a practical ability to use digital sources effectively. Over the past three decades, several approaches have emerged to classify old and new literacy skills that are needed in the 21st century among workers.

Comparatively, information literacy is focused on the way in which information is accessed and evaluated (Martin, 2006), accentuating the location and identification, further evaluation, including the use of media. Additionally, Warschauer and Matuchniak (2010) posit that a skill set can be assigned to digital literacy and one of the esteemed skill designs is named 21st-century skills. Presently, digital literacy can be considered as an integrating framework of several forms of literacy and skill-sets (Martin, 2006). The lack of digital literacy is a key factor of low prosperity, even in post-retirement life. Vasudevan et al. (2014) note that:

"literacy practices derive their vitality from curricula and activities that connect to learners' backgrounds, cultures, and communities; that capitalize on the social nature of learning; and that position ... people to experience literacy as purposeful and themselves as skillful and confident makers of meaning". (p. 6)

Hull and Nelson (2009) have pointed out that these encourage the redesign of the activities and the development of new measures more sensitive to the kinds of ex-

panded literacies evident in participants' interactions' (p. 388). This entails building on learners' existing knowledge and cultural practices and situating literacy learning within a larger motivating activity and/or purpose (McDougall et al., 2018, p. 4). Devising strategies that would provide a focus on "*the real effective freedoms people have and their choice among possible bundles of functionings*" (Terzi, 2005, p. 450) is in keeping with a focus on both human agency and materiality but also with the 'postdigital', by contributing to new knowledge about how the hybridity of digital and non-digital spaces and ambiguous, contingent and asymmetrical interactions within and across them offer a disjuncture to "*the hegemony of the digital*" (Apperley et al., 2016, p. 263).

The uses of literacy (Hoggart, 1957) is frequently revisited by teachers, academics/researchers, and cultural commentators to address current issues in education and social mobility. Hoggart's exploration of the uses of literacy among working-class communities in the north of England purported that the 'uses' of literacy were understood as double-edged, on the one hand enabling mobility and on the other as a controlling force. If third spaces enable young people to re-frame their digital skills and dispositions towards playful and creative uses of new literacy for schooled learning, this would be a key 'use' of new literacy practices. In this way, digital literacy practices relating to identity, socio-materiality, representation, agency, and play can be potential 'of use' in education and for social mobility and civic engagement.

Updating' Hoggart's (1957) articulation reflects the dynamics of bringing together the shifting and contested versions of literacies which have emerged out of semiotics and multimodality (Kress, 2003), media education (Buckingham, 2003), the new literacy studies (Street, 2003), and 'transmedia literacies' (Jenkins, 2011), all of which stand in contrast to the view of literacy as a static, narrow and autonomous set of skills. These dynamic literacies include providing opportunities for new modes of self-representation and collaborative meaning-making, collecting digital contents, from the blog to the social media page, from the uploaded snap to the chat and the tweet around those pictures and thoughts; and assemblage, where literacy, media, and technology converge in educational contexts as "*the material-discursive-semiotic assemblings that are and could be generated ...*" (Comber, 2013, cited in Burnett et al., 2016, p. 240). These dynamic practices are located in enabled, negotiated and contested areas between and across physical and virtual (digitally mediated) interactions, in which meanings are made and shared and new kinds of knowledge, representations and efficacy are generated as the 'new uses' of literacy. As Hoggart (1957) observed, though, uses is a duality in the digital age.

Other uses encompass the following: educational/academic interventions that range from addressing competency gaps to co-creative, participatory projects seeking to utilize digital literacy for constructivist pedagogic means and more ethnographic work seeking to explore how digital practices integrate with socio-cultural factors and personal narratives (see Livingstone & Sefton-Green, 2016); economic/employability interventions aimed at increasing digital literacy competencies for accessing services, benefits, training and 21st century workplace practices, whilst civic engagement/societal well-being initiatives attempt to use digital literacy as a conduit for participation in democracy or accessing public services (e.g., Nuffield Trust, 2016).

The theoretical underpinning of this paper finds expression in Atchley's (2000) stages of retirement theory. The theory espouses the following phases: the pre-retirement, honeymoon, immediate routine, rest, disengagement, reorientation, retirement routine and termination of retirement. Of key importance to the phenomenon of retirement planning and therefore this paper is the pre-retirement planning phase. This phase is constituted by pre-retirement education (PRE) which relates to financial planning; health and lifestyle topics; legal issues; housing information; work after retirement; fitness and relationships. More importantly, digital and non-digital literacy sources are the core constituents of PRE, even in the retirement planning process.

In recent years, westernization, urbanization, education and social mobility have put a strain on the extended family system such that people have shifted their attention from the extended family system towards self-preparedness to life in old age. "Poor (financial) planning for retirement is reported to be a major problem among formal and informal sector workers and may compound the overdependence documented among elderly individuals" (de-Graft Aikins et al., 2016, p. 176). The study explores formal and informal sector workers' sources of retirement planning information and their attendant helpfulness in the retirement planning process.

METHOD AND DATA ANALYSIS

Ghana has diverse ethnic, linguistic, and religious groups. Ghana is a member of various social, political, and economic organizations namely the Non-Aligned Movement, the African Union, the Economic Community of West African States, Group of 24 and the Commonwealth of Nations. Tema is a typical major Ghanaian city that

is privy to and epitomizes an urban setting, which articulates the deepened prongs of workers' retirement preparations and contemporary issues.

The explanatory sequential mixed methods strategy was employed in this study. Using a three-phase approach, the study gathered both qualitative and quantitative data. The first phase constituted the initial qualitative stage that obtained data from state-designated institutions such as the National Pensions Regulatory Authority (NPRA), the Social Security and National Insurance Trust (SSNIT) and SSNIT Informal Sector Fund (SSNIT ISF). These have the mandate to manage and address workers' pension contribution related issues. These organizations and their requisite officials were purposively selected. Key informant interviews were used to elicit important data from the officials. In all, seven key informant interviews were conducted. During the interviews, the voices were audiotaped, before which the consent of the participants was sought. Notes were written as a backup to the voice recordings. The key informant interviews took the form of face-to-face and one-on-one in-depth discussions.

The second phase ascertained workers' general views on retirement planning and the prerequisite information. Number of years of education and the nature of the job were the co-variables that were of significance to the issues articulated in this article. In consequence, the quantitative data explored the following hypotheses: 1. Number of years of education will have a significant effect on retirement planning information access; 2. There is an association between retirement planning information sources and usefulness. Following the guidelines of Creswell and Plano Clark (2007), thematic analysis of the data collected in phase I was utilized in informing the development of the survey instrument for this phase. A multi-stage clustered sampling technique was used to select a sample of 442 workers aged 18-59 years utilizing the formula by Moore and McCabe (1993). An anticipated non-response was built into the survey design. Further, organizations were first stratified into formal and informal sectors, after which they were then clustered into manufacturing, administrative and service units. Out of these, the administrative and service units were randomly selected. From these, individual workers were also randomly selected. In which case, the total population of Tema according to Ghana Statistical Service (2014) is 292,772, out of which 135,640 are employed, and it was from this that the sample for the study was selected.

A questionnaire was used in data collection in this phase. The administration of which took the form of face-to-face interviews to eliminate the situation of unre-

turned questionnaires. To facilitate this, interview appointments were booked severally. The study set out to investigate the association between number of years of education and retirement planning information access, and retirement planning information and the related usefulness.

The third phase sought to understand the lived experiences of workers' retirement preparation information acquisition and/or access. During this phase, 20 respondents who had participated in the second phase also took part in follow up interviews with the purpose of obtaining an explanation for issues raised in phase II. In-depth interviews were used in the gathering of data. Interviews were conducted for a period ranging between 60 and 90 minutes. Before which permission, to tape record discussions including informed consent were sought.

The interview guides and questionnaire were piloted to ensure accuracy in understanding, fluency, and proper wording of questions. The face-to-face interviews were conducted in both English language and Ghanaian languages, namely Ga, Ewe, and Twi.

The key informant and in-depth interviews were preliminarily analyzed as they were being collected based on which modifications were made in the sampling strategy before the next series of interviews to ensure gaps were ascertained and rectified. This act preserved the multivocality and complexity of lived experiences while maintaining focus on the study's theme. The qualitative data analysis process was undertaken following Bryman's (2008) analysis strategies. A combination of the following analytic strategies was employed in this study. First, analytic induction, which was related to reaching general explanations, was used. Second, thematic analysis was undertaken in relation to the examination of theoretical themes or hypotheses of research through studying particular cases. Finally, the narrative analysis was used to search for new issues from the stories told by the research participants about their lives.

The analysis process was aided by the application of the framework method in which matrix-based comparisons such as comparative tables were undertaken. The framework table offered a detailed analysis of the data within a particular theme. This, therefore, provided a clearer and deeper understanding of key themes within the context of the study. The efficiency of the thematic analysis carried out was ensured following a variety of principles in the course of data processing. These include repetition in search of issues that are commonly repeated by interviewees, non-repetition in search of issues that were rarely mentioned by the interviewees; similarity

and difference in a search of similar and different responses among interviewees on a given theme such as digital and non-digital resource patronage; transitions in search for issues that link themes and sub-themes together. Theory linkage in search for linkage or connections to scientific concepts or theory for the outcome of research findings. These were undertaken to ensure the pursuance of the relationship between categories and themes of data seeking to increase the understanding of the phenomenon.

Further, Nvivo Software was used to facilitate text coding and to retrieve coded texts as well as interpret the data. The analytical process articulated by Bazeley and Jackson (2014) was followed, using five distinct steps. A project was created which comprised all the documents, coding data and related information that assisted in the process of data analysis as well as saving the NVivo project. The transcribed audio-recorded interview files were named respectively. Qualitative data files which entailed the preparation of documents for import, following which the necessary documents that were intended to be analyzed were then imported. Additionally, notes were engaged as a place in NVivo for references to code text.

A chunk of data in a project document under a particular node was taken through the highlight of the critical text using the mouse and pulling the highlighted texts to the identified node using the coder. This entailed finding obvious themes as well as auto-coding. Subsequently, multiple codes were assigned to the same chunk of the texts including going through the same process. The codes formed a pattern. The passages of texts were compared for ways in which they were similar and different. The emergent concepts, for example, were all retirement planning information responses. Others were the dimension of the use of accessibility of digital and non-digital artifacts, a host of others. The final step pertained to going further which encompassed the following: the start of the analysis, going further with concepts, categories, and themes including narrative and discourse. Memos were used to tell the story of the research by adding descriptions. The knowledge developed from the data was reported.

The outcomes of these activities were recorded in discussion memos. These strategies were integrated into the process of learning from the data. A thematic multi-case analysis was employed, the comparative focus of which was on individual cases including the preservation of their uniqueness. Miles and Huberman (1994) have succinctly expressed the goals of this type of analysis as follows:

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One aim of studying multiple cases is to increase generalizability, reassuring yourself that the events and processes in one well-described setting are not wholly idiosyncratic. At a deeper level, the aim is to see processes and outcomes across many cases, to understand how they are qualified by local conditions, and thus to develop more sophisticated descriptions and more powerful explanations.

Further counts of a theme within the unstructured text were used as a proxy indicator of the significance of that theme for qualitative analysis. The themes appeared as major findings and were used to create headings in the results section of the paper. The interrelation between themes involved the use of narrative passage to convey the findings of the analysis. The themes were interconnected into a storyline. From these explorations, the researcher sought to understand how people construct meanings and actions, as preparations for understanding why people act the way they do (Charmaz, 2006). The final step entailed the selection, filtering and viewing of the predefined report for the study. All names used for research informants and interviewees are pseudonyms.

The quantitative data gathered were analyzed using the Statistical Package for Social Science Software (SPSS) version 20.0, using frequencies, percentages, and bivariate analysis. The Pearson Chi-square and Cramer's V test were used in the study as the standard to assess the relationship between the degree of relatedness and unrelatedness. The usage of multi-stage sampling approach means that the results are statistically representative. Thus, generalizability is permissible to the general population.

RESULTS: SOURCES OF RETIREMENT PLANNING INFORMATION

The study population consisted of 213 males (48.2%) and 229 females (51.8%) aged between 18-59 years. Most of the respondents had some level of education and were constituted by the formal sector (221, 50%) and informal sector workers (221, 50%) (Table 1). Overall, the highest educational level attained by a near majority of the respondents (46.4%) was tertiary education.

Table 1 - *Respondent demographics*

Variables	Characteristics	Frequency	Percent%
Age	18-24	21	4.8
	25-29	42	9.5
	30-34	81	18.3
	35-39	58	13.1
	40-44	67	15.2
	45-49	59	13.3
	50-54	54	12.2
	55-59	60	13.6
Gender	Male	213	48.2
	Female	229	51.8
Educational level	No-formal education	24	5.4
	Pre-tertiary education	212	48.0
	Tertiary	206	46.4
Sector of work	Formal	221	50
	Informal	221	50

The sources of retirement planning information can be categorized into two, namely digital and non-digital sources of retirement planning information at the institutional level, and digital and non-digital sources of retirement planning information at the individual level.

Digital and non-digital sources of retirement planning information at the institutional level

The informational functions consist of financial education provided to a worker on entering an organization based on securing gainful employment. It can also be undertaken in the course of working life by way of provision of guidance. The results show that these functions are performed by NPRA, SSNIT including SSNIT ISF (See Table 2) at the large-scale level in relation to the functionality, operationalization, and benefits

of the new three-tier pension system and/or scheme. At the small-scale level, indeed almost all organizations provide their employees with ‘pep-talks’ of one form or the other regarding retirement preparation.

It is required of these institutions to sensitize all workers including the general public about the operationalization and functions of the national pension system as a whole as well as the respective Tier constituents and benefits. This is indeed essential because there have been slight changes made to the pension system compared to that under the regulation of SSNIT namely the three core tiers and their benefits. Hence, the need to educate the general public. This singular function is performed differently by all the different institutions involved such as the number of times sensitization is undertaken, the modus operandi within the context of financial information availability and/or constraints. The key informant interviews revealed that all pension service-providing institutions systematically hold financial information sections.

Public education is supposed to be a two-way affair between responsible institutions and workers, which presupposes that just as these institutions must undertake public education; workers should in turn also seek after knowledge and aim higher. Hence the statement that “*and then the worker must also seek knowledge. You yourself you must seek knowledge and then the worker must also not be content with the position that he is occupying*” (Official 1).

Table 2 - Institutional dynamics of retirement planning information dissemination

Function	Institution	Strategic tools	No. of times
Financial education	NPRA	Regional tours	-
		Radio	24
		Face-to-face outreach programs	-
	SSNIT	Face-to-face outreach programs	260, 764
		Media Forum	3
		Seminars	-
		Brochures	-
		Leaflets	-
		Television	-
	SSNIT ISF	Face-to-face outreach programs	4

Sensitizing the public particularly workers on the operationalization, functionality, and benefits of the new pension system offers individuals and/or workers retirement planning opportunities. This may facilitate preparation adequately and effectively towards retirement. This implies that workers may not be entirely and/or adequately knowledgeable about the pension system, although they have been sensitized under the auspices of PNDC Law 247 especially those who were already employed before the institution of Act 766. The important institutions such as the NPRA, consultants, Trustees, among others undertake sensitization programs collaboratively and on a continuous basis. This, in turn, tends to facilitate planning adequately and effectively towards retirement as earlier mentioned. Presently, sensitization programs are undertaken by institutions, e.g., SSNIT on their specific mandates to provide awareness of a general overview of the national pension system.

The informational messages that emerge from public education campaigns come in two forms namely worker and employer-oriented messages. The worker-oriented messages focus on providing workers with insights into updating their recurrent personal records, how to ensure they receive prompt payments. These and others are depicted in the following quotes:

We do education on SSNIT. But sometimes, we trespass and talk more elaborately. We educate them on how to receive their payments promptly, how they can update their current information that's all. (Official 2).

In fact, very serious public education work on the three-tier pension scheme started in 2012 when the authority was able to recruit staff. But a lot of education was also done by the pensions' commission, those who came with the new pension scheme (Official 3).

The employer-oriented messages concentrate on encouraging employers to safeguard the interest of their employees regarding the deduction and onward payment of pension contributions on behalf of the latter promptly, which eventually goes a long way to protect their future – symbolized by post-retirement life.

It is worth reiterating the fact that sources of retirement planning information traverse digital (television, radio, media) and non-digital divides (regional tours, workshops, outreach programs) with SSNIT having the highest number per year features of 260, 764. The sensitization programs are undertaken using a variety of mediums. Television is exemplified by SSNIT and radio is used by both NPRA and SSNIT, particu-

larly the trending ones. The most listened to radio stations such as Obonu FM, Vision 1 FM, Hot FM, Kasapa FM, Uniiq FM to mention but a few; outreach programs utilized by the NPRA and SSNIT ISF enables the audience to ask pertinent questions; media forums between SSNIT and media editors and/or practitioners; workshops and finally seminars. Others entail the production and distribution of brochures and informatory leaflets including reaching out to people in contexts such as churches, mosques, markets, other significant public gatherings, etc. The time slots these institutions use for public education range from 30 minutes to 2 hours. Further, the messages are propagated through the English Language, Ghanaian languages - Ga, Twi, Ewe, Dangbe. It is worth mentioning that points 2 and 4 above are indicative of digital information artifacts. The preceding discussion is skewed extremely towards non-digital artifacts to the detriment of the digital aspect. This denotes the exclusion of the large majority from technological advancement and usage in the information society.

The sensitization messages function to create structures of meanings from the life worlds of the listeners and viewers. Such messages generally invite listeners to recognize themselves as they are or might want to be. Significantly, the effectiveness and efficiency of financial education are determined by viewers and listeners. The kinds of messages put across to the populace during sensitization programs relate to the structure of the three-tier pension scheme, wherein tiers 1 and 2 are mandatory for formal sector workers tier 3 is voluntary for informal sector workers but not exclusive to them. The messages also cover a broad spectrum and come in two distinct forms namely informal and formal sector orientations. The informal sector workers information centers on the need to participate and contribute to the pension scheme, thus the opportunity to save for the future, the ability to obtain a lump sum including a monthly pension income. The messages for the formal sector workers concentrate on certain benefits that exist under tier 2 namely the use of the tier's funds to secure a primary residence.

The previous discussion projects sensitization messages in two distinct ways. First, the vagaries of retirement, for instance, its timing irrespective of which financial security assures workers the retirement they desire. Second, organizations' advice and investment instruments constitute vehicles that simplify participation in pension scheme contributions. However, some challenges were encountered in the provision of financial information such as the difficulty of explaining the composite nature of the pension system. Also, organizations consulted for permission before the sensitization campaigns often failed to respond to the requests made and/or it takes much too long for them to respond to such requests. Finally, poor attitude exhibited by the

general public towards the information provided. The statement that ‘*Ghanaians do not care about the future*’ (Official 4) illustrates this. The provision of information in aid of retirement preparations is indicative of the socialization of workers at this level to understand the dynamics of pensions and/or retirement planning. Yet there is evidence that many individuals are not well-equipped to make sound saving decisions (Lusardi, 2008), which presupposes as Ofei-Kwapong (2013) notes that public education on the new pension scheme is ‘*the responsibility of the pension regulatory body, the NPRA which has done a very poor job in this regard*’ (p. 46).

Digital and non-digital sources of retirement planning information at the individual level

The study examined the correlation between number of years of education and the need for retirement planning information. The result is a Pearson r of 0.316 (31.6%). Hence, for every change of one standard z-score unit in the number of years of education, there is one standard 0.316 standard unit of retirement planning information required in the same direction. Put differently, in predicting variations across the sample on the dependent variable, errors were reduced on all respondents by 9.98% (i.e. r^2), by knowing information about their extent of need, all the variations that exist in the sample for need was accounted for. The number of years of education thus correlates positively with the need for retirement planning information (Table 3).

Table 3 - Correlates of number of years of education and retirement planning information need

	Number of years of education	Retirement planning information need
Number of years of education		.316**
	1	.000
		442
Retirement planning information need	.316**	1
	.000	
	442	442

The result thus shows that in planning for retirement workers solicited ideas from a myriad of digital information artifacts such as the internet, tablet, including the

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media - print, electronic and social (e.g., Facebook, WhatsApp, Instagram, YouTube, some books). The non-digital ones encompass books, organizations, family relations, friends. This depicts the use of hybridity of digital and non-digital spaces in obtaining new information and knowledge in relation to retirement planning (See Table 4). Table 4 shows that the formal sector respondents namely males (73%) obtained their information from pension service providers. This suggests that informal sector workers, as well as females in general, patronize non-digital artifacts and/or resources. The males also obtained more information from bosses, insurance companies, and print media whereas the females depended more on family and own ideas. In the case of the informal sector, females depended more on their families (95.8%), own ideas, friends, and colleagues, church. All these depict the non-digital sources of retirement planning information. This is reminiscent of technological backwardness at one level, and at another level, it may be a sign of learned helplessness regarding digital literacy diffused into the non-digital sphere. However, some of the sources were obtained from other sources such as digital sources – social media, internet, and a host of others. The digital sources of retirement planning information consist in part of books and magazines, electronic media, print media, radio, television, social media including the internet at large. This is reminiscent of the emergence of the digital age in Ghana in general and retirement planning in particular. However, it is worth acknowledging the fact that digital literacy goes beyond the dynamics of retirement planning, occupying a broader space in the life worlds of the human race.

Table 4 - Retirement planning information sources

Information sources	Formal sector		Informal sector	
	Male	Female	Male	Female
Family	51.4%	48.6%	43.2%	56.8%
Friends & work colleagues	61.9%	38.1%	41.3%	58.7%
Books & magazines	86.4%	13.6%	59.1%	40.9%
Experience from managing personal funds	47.2%	52.8%	50.0%	50.0%
Financial planner	57.1%	52.8%	50.0%	50.0%
Pension Services Providers	57.1%	42.9%	28.6%	71.4%
Electronic media	73.0%	27.0%	56.9%	43.1%
Print media	70.0%	30.0%	65.0%	35.0%
Own ideas	62.5%	37.5%	62.5%	37.5%
Radio	24.3%	75.7%	53.2%	46.8%
People's experiences	0%	100.0%	100.0%	0.0%
Bosses	50.0%	50.0%	100.0%	0.0%
Church	0.0%	100.0%	0.0%	100.0%
Consultant	0.0%	100.0%	25.0%	75.0%
Banks	100.0%	0.0%	100.0%	0.0%
Insurance companies	100.0%	0.0%	50.0%	50.0%
Employers	100.0%	0.0%	50.0%	50.0%
Internet	70.0%	30.0%	50.0%	50.0%
Social media	45.0%	55.0%	50.0%	50.0%
Television	27.8%	72.2%	33.3%	66.7%

The in-depth interview data support the claims in the Table above. This amplifies the dependence on family relations as sources of retirement planning information—including the role of the family in the retirement planning process. Such sources like others foster great motivation to plan ahead. For example:

I got my retirement planning ideas from my daughter. She advised me to save and invest towards my old age (Informal Sector Female).

My daughter enlightened me (Informal Sector Female) .

I got my retirement investment ideas from my father. My father's example challenged

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me. He set the pace. As a result, I refused to live with my uncle but with a friend to be challenged to achieve and acquire assets. I left a friend's house with no place to go to. But then not long after that, I bought a flat including two plots of land (Formal Sector Male).

I obtain lots of ideas from colleagues at work (Formal Sector Male).

I got counselling in relation to retirement planning at PTC¹ (Formal Sector Female).

Social media has played a significant role as my retirement planning source of information (Formal Sector Male).

My retirement planning information was mostly obtained from the internet (Formal Sector Female).

I get most of my retirement planning information from WhatsApp (Informal Sector Female).

As for me, I get most of my retirement planning information from Facebook (Informal Sector Male).

As the in-depth interview data shows, most formal organizations are in the habit of organizing seminars/workshops for workers, who are 59 years old, e.g., in Ghana Education Service, 50 years for SSNIT. The key informant interview data also show that SSNIT organizes seminars for its workers who have ten years, five years and one year to retire respectively (Official 3) the former is quite late in coming because at 59 years not much rigorous remedial measures can be instituted by workers towards a robust retirement preparation. Perhaps, serious consideration should be given to doing the same at 50 years to yield robust outcomes. Besides age segregation regarding the attendance of retirement planning seminars/workshops, including the fact that workers are often not given any counseling at work start is counterproductive.

The survey data was further subjected to Pearson Chi-square statistics and Cramer's V test to examine whether there is an association between retirement planning information sources and helpfulness of obtained information (Table 5). The Cramer's $\chi^2=0.705$ outcome indicates a strong existing association between the two variables.

¹ PTC stands for Presbyterian Training College.

Table 5 - Test statistics of retirement planning information sources and helpfulness

Tests	Values	Degrees of Freedom	Asymp. Sig. (2-sided)
Pearson Chi-Square	438.688a	10	.000
Cramer's V	0.705	10	.000
N of Valid Cases	442		

The respondents who benefitted from the digital and non-digital sources or artifacts for retirement planning information (82.4%) drew several lessons from them, ranging from expectations about retirement, informational access, investments, savings, pension income calculation, planning for retirement, planning early (5%), diversification of plans, 'comfortable' retirement life, retirement benefits, undertake entrepreneurship, reliance on children and social relationship building (Table 6). However, only a few of respondents (19.3) who have learned these lessons constitute a few of the respondents (17.6%).

Table 6 - Lessons learned from retirement planning literacy

Lessons	Frequency	Percent (%)
Informational access	3	0.70
Investments & Savings	16	3.62
Plan for retirement	8	1.80
Planning early	14	3.16
Diversification of plans	22	4.90
Pension income calculation	1	0.22
Expectations about retirement	2	0.47
Retirement	1	0.22
Retirement benefits	2	0.47
Undertake entrepreneurship	3	0.70
Childcare	1	0.22
Reliance on children	1	0.22
Social relationship building	1	0.22
Subtotal	87	19.3
N/A	355	80.3
Total	442	100

DISCUSSION

The retirement planning informational sources resorted to are multifaceted and consist of formal and informal pathways to information derivation. Sociologically, these are indicative of socialization involving formal and informal socialization agents. These provide different retirement planning advice and insights regarding retirement expectations, early start of retirement preparation, investments, savings, plan diversification, social networking among others. Retirement planning information facilitates positive savings attitudes which are essential in terms of resource mobilization for utilization in old age. Nonetheless, workers have diverse informational needs and saving patterns, with implications for designing, customizing and tailoring public education programs to suit the numerous needs and levels of financial knowledge. Retirement planning information and preparation towards life in old age are inseparable.

The categorization of retirement planning information into institutional and individual worker levels connotes macro and micro level considerations. Macro, meso and micro level contexts work jointly to shape retirement planning based on partnerships centered on the mobilization and harnessing of resources, efforts, and initiatives on the part of (state) institutions and workers.

The artifacts used are suggestive of factors in their effectiveness, which may vary in different economies depending on the level of economic growth and social development. Improved retirement planning education appears to be a primary avenue for improving retirement preparation. Adzawla et al. (2015) highlight sector-specific issues in the Ghanaian economic setting indicating that:

The service providers need not handle information delivery ... as it would have been in the formal scheme because, in the case of the formal workers, the workers' contributions are deducted from source before they even get their salaries. However, the informal sector worker has to carry his/her money to the scheme's office" (p. 41).

The workers demonstrated digital literacy functioning in the following ways:

- independent engagement with learning in new (digital) contexts;
- self-selection of suitable applications for retirement planning related learning;
- autonomy in taking the lead in collaborative learning with peers and significant others.

Clarke and Svanaes (2014) articulated the essence of one-to-one access including the ability to personalize the experience of learning, which depicts capability. The workers also demonstrated meaningful utilization of digital literacy for change in the positive direction. However, their capabilities were subjected to impediments namely inadequate information access and deep-rooted perceptions. Noteworthy is that it is essential to look at the role and/or uses of digital means in relation to retirement planning as a field of digital literacy education, even at the phase of 'maturation.' Hence, following Gilster's (1997) definition, the workers have demonstrated a practical ability to use digital sources effectively.

More formal sector workers were users and/or exposed to digital artifacts and the associated digital literacy due to their nature of work. Thus, the categorization of such

workers as “digitally literate” with implications for social inequality. Digital literacy has facilitated informed decision and choice making. This may have consequences for the increasing economic and social disparities in retirement preparation including education levels. Adzawla et al. (2015) found similar results regarding the latter. The positive aspects of the impact of ICT on productivity, growth and retirement planning, in particular, may cause adverse effects of increasing (economic and) social disparities in retirement preparation and thereby creating a digital divide (Hoffman, 2008). Significantly, ICT and the internet have considerable power to strengthen traditional forms of inequality based on uneven access to computer devices, and internet and level of digital literacy.

This implies that digital literacy facilitates the development of human capacity, which when improved upon may yield high gains. Because it builds competence and strengthens the associated capability to engage in the rigors of retirement preparations. From Sen’s (2008) viewpoint, capability is more complicated than competence, and he reacts against models by which the well-being of groups of people is assessed upon reductionist metrics. According to Sen, capability emphasizes human diversity, the significance of choice-making (including negative choices), and the possibilities of flourishing:

The capability approach to a person’s advantage is concerned with evaluating in terms of his or her actual ability to achieve various valuable functionings as a part of living ... Some functionings are very elementary, such as being adequately nourished, being in good health, and these may be strongly valued by all, for obvious reasons. Others may be more complex, but still widely valued, such as achieving self-respect or being socially integrated. Individuals may, however, differ a good deal from each other in the weights they attach to these different functionings – valuable though they may all be – and the assessment of individual and social advantages must be alive to these variations (pp. 271-272).

Competencies as functionings are utilized for a broader range of capabilities (McDougall et al., 2018) to explore the uses of particular kinds of digital technology for learning within ‘a mesh of interconnections’ (Livingstone & Sefton-Green, 2016, p. 61; McDougall et al., 2018, p. 1). The potential for technology albeit digital literacy to empower and engage workers in retirement planning – digital artifacts are of shared interest among the various stakeholders and the research communities working

across the fields of education and literacies. Subsequent technological advances, with the use of computers to design, direct and control production means human skills have been destroyed. Any digital literacy intervention that harnesses networks while making connections, both online and in 'third spaces' will need to be mindful of any deep-rooted divisions or perceptions in the local context that might impede participation (McDougall et al., 2018, p. 3). Overall, whereas the institutional level information outlines information dissemination in relation to the pension system, the individual level aspect concentrates on obtaining retirement planning information and access in general. However, they both complement each other for better outcomes. Digital literacy facilitates retirement planning information access and flows through enhanced media and other literacies and associated competencies, skills, and dispositions, while retirement planning offers the opportunities for obtaining the requisite information with implications for social inclusion.

Significantly, the worker with many capabilities could enjoy different activities; pursue different life paths including retirement planning. The functionings may be very basic for instance, being literate digitally and non-digitally. Finally, the worker as an agent is poised to be active, creative, and able to act because of their retirement aspirations.

Education albeit expressed in digital literacy has the propensity to broaden the knowledge and understanding of workers concerning pension contribution (Adzawla et al., 2015) and retirement planning in general as these workers are better informed about retirement policies as well as better placed in relation to financial management. However, there are two contrasting sets of results regarding financial education programs vis-à-vis retirement preparation. Whereas Bernheim and Garrett (2003) articulate positive financial education effect on savings and retirement plans, Duflo and Saez (200s) contend there is little or no effect of the same. Adzawla et al. (2013) reaffirm the fact that the awareness of pension schemes and the related issues, which education or digital literacy attains may prevent workers from participating in pension contribution, not to mention retirement planning in its comprehensive fashion.

CONCLUSION

The study articulates the mundane practices of retirement planning information seeking practices of everyday life as a specific space of the agent –the worker. Noteworthy is that it speaks to the rich field of social literacies research. Retirement planning requires knowledge of tax laws, compound interest, present and future value of money and investment strategies. Such knowledge can be ascertained from digital and non-digital information means. Digital literacy tends to play a significant role in equipping workers with the necessary information, knowledge, and skills to enable proper retirement planning, and ensure financially independent retirement life. Digital, non-digital, and associated information facilitate the institution of retirement plans that may yield the following outcomes – financial security, living arrangement, social networks, healthcare, leisure/employment beyond pensions. Zaidi (2015) posits that preretirement planning facilitates increased financial security, improve health and well-being including age-friendly infrastructure. Financial security may be reflective of a regular retirement income (Adzawla et al., 2015; Dovie, 2018), whether sufficient or otherwise. Research (e.g., Snyman et al., 2017) has shown that finances are the strongest single predictor of the decision to retire and that people are more likely to leave the workforce if they can financially afford to retire than if they cannot.

Thus, the role digital literacy plays in terms of retirement planning is highly discernible. Digital literacy has become one of the key competencies to ensure social cohesion, active citizenship, and personal fulfillment (Bernsmann & Croll, 2012, p. 53). Recognized skills and dispositions emphasize the ability of digital literacy in retirement planning through increased engagement with technological interventions. Retirement planning and the attendant prerequisite information acquisition is synonymous with human rights issues. The three defining characteristics of human rights are universality, alienability, and indivisibility. Retirement planning connotes indivisibility, a situation where retirement planning is a part of the individual worker as the worker (Borges, 2017) due to the inevitability of the retirement transition. Theoretically, the findings depict an adaptation of this study to the theoretical postulations of Atchley (2000) since in the process of retirement planning workers depend on digital and non-digital literacy to obtain information on what to do in lieu of retirement, which confirms the phenomenon of pre-retirement education as a retirement planning prerequisite. Intensification of retirement planning may be aided through greater digital literacy in the future hence salvaging the relatively invisible

social groups like informal sector workers in the digital age. Nevertheless, this may seem unduly optimistic.

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Sustainability of the Black Press as Social Justice: A Digital Technology Gap Study

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Abstract

The National Newspaper Publishers Association (NNPA) enlists a total of 157 members - publications directed to the African-American community in the United States. There is currently no research on how these publications have adopted technology through time, or if the adoption of new media contributes to their growth and survival in the publishing industry. In Florida, *The Weekly Challenger*, *Daytona Times* and *Florida Courier*, three of 13 historical newspapers, are connected in history and structure and show different types of survival methods. How have these publications adopted technology through time? What types of trends are reflected in these newspapers? What challenges are faced

by the Black community weeklies? To answer these questions, the authors conducted case studies employing participant observation, lengthy interviews, historical research and qualitative questionnaires. A significant finding of this research demonstrates the difficulty to get responses due to suspicion and intimidation from the targeted audience. These newspapers struggle with a diminished workforce who lack professional and technical training and must perform multiple roles. Findings also show that 14 of the newspapers listed as current NNPA members are not currently in circulation and that the publications' pattern of adoption is not planned, but a consequence of availability and chance.

Keywords: Internet, journalism, black press, African-American newspapers, Afro-newspapers

A Sustentabilidade da Imprensa Negra como Justiça Social: Um Estudo Sobre o Hiato na Tecnologia Digital

Sumário

A *National Newspaper Publishers Association* (NNPA) conta com um total de 157 membros - publicações dirigidas à comunidade afro-americana nos Estados Unidos. Atualmente,

não há pesquisas sobre a forma como essas publicações adotaram a tecnologia ao longo do tempo ou se a adoção dos novos mídia contribui para seu crescimento e sobrevivên-

cia na indústria editorial. Na Flórida, o *The Weekly Challenger*, o *Daytona Times* e o *Florida Courier*, três dos 13 jornais históricos, estão conectados na história e na estrutura e mostram diferentes tipos de métodos de sobrevivência. Como é que essas publicações adotaram a tecnologia ao longo do tempo? Que tipos de tendências são refletidas nesses jornais? Que desafios são enfrentados pelos semanários da comunidade negra? Para responder a essas perguntas, os autores realizaram estudos de caso utilizando observação participante, entrevistas longas, pesquisa his-

tórica e questionários qualitativos. Uma descoberta significativa desta pesquisa demonstra a dificuldade em obter respostas, devido à suspeita e intimidação do público-alvo. Estas publicações lutam com uma força de trabalho reduzida, que não tem treino profissional e técnico e deve desempenhar várias funções. Os resultados também mostram que 14 dos jornais listados como membros atuais da NNPA não estão atualmente em circulação e que o padrão de adoção das publicações não é planeado, mas uma consequência da disponibilidade e do acaso.

Palavras-chave: Internet, jornalismo, imprensa negra, jornais Afro-Americanos, Afro-jornais

According to the National Newspaper Publishers Association (NNPA), there are more than 200 local and regional publications directed to the African-American community in the United States. On its website, the NNPA enlists a total of 157 members from 29 states.

There is currently no research on how these publications have adopted technology through time, or if the adoption of new media contributes to their growth and survival in the publishing industry. In a time when relevant and larger newspapers have disappeared or merged with bigger papers — and as their intended audience shows changing patterns in the way that they consume the news — most of these Afro-newspapers continue as print community weeklies that they must adapt to maintain their readership. To survive and hopefully thrive, ethnic presses must change the ways that they gather information, produce the articles, publish the newspaper and organize their staff.

A significant finding of this research demonstrates the difficulty to employ quantitative methods with this audience due to suspicion and intimidation from the indi-

viduals. The results of this study also indicate that besides facing old challenges, such as lack of advertisement, financial pressure and declining staff, these papers have been struggling with a diminished workforce who lack professional and technology training and must perform multiple roles in the organization. Findings also show that 14 of the publications listed on the NNPA list aren't currently in circulation and that the newspapers' pattern of adoption is not planned, but a consequence of availability and chance.

In Florida, three of 13 historical newspapers directed at the African-American population are connected in history and structure and show different types of survival methods and ways of adopting new technologies.

The Weekly Challenger, in St. Petersburg, bought by the publisher Cleveland Johnson Jr. in 1967 and serving the African-American communities in South St. Petersburg. *The Daytona Times* (1969), first Afro-newspaper in Daytona Beach, and *the Florida Courier* (1989), the first Black newspaper in Florida to go statewide. The civil rights activist Charles Cherry founded both. These three publications also share characteristics: small family business that faced new challenges after the death of their founders, and that continued thanks to the families' matriarch's decision.

How have these publications adopted technology through time? What types of trends are reflected in these publications? What problems are faced by the Black community weeklies? What challenges are faced in getting responses to the research? This study addresses these questions.

LITERATURE REVIEW

HISTORY OF THE BLACK PRESS

In *The African American Newspaper: Voice of Freedom*, Washburn (2006), wrote that to figure out where Black media, as well as any other media, are going in today's world, it is helpful to know where they have been. Washburn (2006) described the origins:

The publication of America's first (B)lack-owned newspaper, *Freedom's Journal*, in 1827 gave African Americans a voice of their own to 'plead our own cause' in the words of editors John Russwurm and Samuel Cornish. From then to now, (B)lack newspapers offered passionate advocacy for (B)lack rights, opportunities, and visibility against the community's common enemies.

Agreeing with the importance of the African-American press for molding self-esteem, opinion and setting public agenda, in 1990, Dates wrote that between the first emergence of Freedom's Journal in 1827 and the Civil War, around forty Black newspapers were published with anti-slavery titles such as *Alienated American*, *Mirror of Liberty* and *Freeman's Advocate*, among others. The exact number of press during that period is still a matter of discussion among historians.

According to Dates (1990), "many of them had limited lives and would not be considered newspapers in the current sense of the word, but they served to create a print institution for the expression of views controlled by (B)lack people. All of these papers, because of their limited markets, were under extreme financial pressure."

The glory days of the African-American press began during the 1920s and 1930s. According to Muhammad (2003), during those decades, Black publishers augmented their incomes and acquired power among other members of their society: "Robert S. Abbott started *The Defender* with \$13.75 and became one of America's first (B)lack millionaires. By 1929, *The Defender* circulation was 230,000 a week, but the *Pittsburgh Courier* was biggest, topping 300,000 with 15 editions across the country."

During the World War II, all African-American newspapers experienced an increase in circulation and actively supported the war effort. After the combat finished, newspapers like the *Pittsburgh Courier*, the [Baltimore] *Afro-American*, *The Chicago Defender*, and the *New York Amsterdam News* gained more popularity among their communities. Dates also noted that once the conflict against foreign fascism ended the Black press was stronger than it had ever been and questioned more vigorously the domestic apartheid that existed. Dates (1990) asserted that:

At the beginning of 1948, there was a total of 169 newspapers, 56 college campus publications of all types, and more than 100 religious, fraternal, general and other papers, bulletins and magazines. But in 1954 the first hint came that this situation would not last forever. The NAACP raised the issue of the legality of segregated schools in the case of *Brown v. the Board of Education*.

The quest end of segregation was not the only factor that contributed to the dwindling of these type of newspapers from the late 1940s until the mid-1960s. The African-American press was no longer alone in the Black community's terrain; it faced the uprising of other types of general media, such as the radio, television, and magazines.

Socio-political changes also added new challenges. For example, Muhammad (2003) wrote that the bright days in Black media changed even more by the Black Power era:

The (B)lack press was considered, at best, a farm team for major dailies, which recruited top (B)lack journalists to cover the civil rights movement and eventually attracted readers and advertisers once considered the (B)lack press's captive market. Conventional wisdom by the 1980's was that the (B)lack press, by doing such a bang-up job promoting racial equality, had made itself obsolete.

According to Wilson II (2014), despite the numerous challenges faced by the Black papers in the second half of the 20th century and beyond, success stories can still be found in some examples of African-American newspapers founded before 1935 that have survived into the second decade of the 21st century.

The authors also listed the publications currently operating. Among the titles Wilson II mentioned were: *Atlanta Daily World* (1928), *Baltimore Afro-American* (1892), *Charlotte Post* (1878), *The Chicago Defender* (1905), *Cleveland Call and Post* (1928), *Houston Defender* (1930), *Indianapolis Recorder* (1806), *Kansas City Call* (1919), *Los Angeles Sentinel* (1933), *Miami Times* (1923), *New York Amsterdam News* (1909), *Philadelphia Tribune* (1884), *Pittsburgh Courier* (1910) and *The St. Louis American* (1928). Besides, Wilson mentioned that the emerging new Afro-American newspapers struggle with six different factors: operating under a capitalistic environment; lack of investment from industries and corporations; White-owned media appropriating Black businesses; confusion in what constitutes the Black press; lack of reporting/editing staff; and difficulty to achieve an in-depth reporting.

Determining the exact quantity of African-American publications across the United States represents another challenge for the industry. In 2016, Vogt wrote that during 2015 the National Newspaper Publishers Association (NNPA) tracked the number of African-American publications at around 200. According to Vogt (2016), only a handful of historically prominent Black papers have regularly audited circulation figures. This low percentage affects the capability to obtain industry-wide measures. She also mentioned that those calculations showed some audience decline in 2015.

TECHNOLOGY IN THE BLACK PRESS

Wolseley (1990), also wrote about the future of the Black papers and expressed his predictions during the 1990s. Wolseley's research — published in 1990 — was confined exclusively to the print media and did not include electronic journalism: "They fall in three groups: the press will disappear, it will diminish but survive, or it will be a strong element in communication in this country." The researcher also explained that, during that time, the American Black press confronted a public split never seen before with a large middle-class group. On one side; a small group composed of militant Blacks who wanted change; and a third group, not part of its potential audience, representing the lower socio-economic and population with limited education that generally reframed from reading newspapers at all.

In 2008, Everett argued that the Black press was yet again at the forefront of a bold, different migration. Despite the integration of newsrooms that took the talented writers from Black newspapers; the apparent devastation of the historic African-American press, and the remaining reporters' refusal to be forced into oblivion by mainstream and new digital media technologies the Black papers adapted to their new environment. Everett also studied the transition from print to digital media for two established Black publications, *The Charlotte Post* and *Afro-America@n*, "one of the first established newspapers, Black or White, to go online."

Wilson II (2014) wrote that by 2010 many of the more economically stable Afro-American papers had transitioned to producing digital online versions to complement their print editions. The issue, back then, was that only a small percentage of Black weeklies have taken that transitional step and the prospective advertisers did not believe that an economically viable African American demographic accessed the online sites.

Regarding demographics, Vogt (2016) explained that from 2014-2015, there were virtually equal shares of profits and losses relating to the number of unique visitors and the minutes per visit that readers spent with a group of 14 outlets of African-American media.

According to her research:

When it came to mobile traffic, the majority of sites (10 of the 14) experienced an increase in unique visitors, and eight of these sites showed an increase of 10% or greater from the previous year. For 11 of 14 of the outlets, however, the number of unique visitors from desktops fell, with eight showing a drop of 10% or greater from the fourth quarter of 2014 to the fourth quarter of 2015.

As a side note, Vogt reported that in March 2016, the Poynter Institute and the National Association of Black Journalists announced that they would join to provide leadership training to journalists of color working in digital media.

Citing Everett, 2008, the portrait of the migration to the Internet of *The Charlotte Post* and *the Afro-American's* “clearly reveals their commitment to continue the struggle for (B)lack political, social, cultural and economic survival and prosperity into the digital age.”

TECHNOLOGY IN THE NEWSROOM AND A NEW TYPE OF READER

Not only the African-American press faces challenges of adapting to a new media landscape. New technologies will always present defiances for the newsrooms. Mari (2017) considered that the adoption and use of telephone technology was part of a long-established pattern of news workers using technology to increase their storytelling potential, but they also required new ways of acculturating young reporters to their effective use, and helped establish new routines built out of and on top of (or sometimes within) older ones:

Reporters and editors sometimes resisted, and at other times coopted, these changes. Coming into a space already structured by both vertical and horizontal hierarchies of power, the potential of radio, the car, and then the radio car was mitigated and molded by an existing culture of work practices. It accelerated and then cemented the separation of news gathering from news production, and set the stage for the computerization of the Newsroom.

For Spyridou, Matsiola, Veglis, Kalliris and Dimoulas (2013), findings suggest that professional culture, articulated in skills, ideas and practices, acts as a network that weakens the potential impact of technology towards innovation and audience-oriented models of journalism. The results of her study point to the conclusion that “the internet and related tools are seen as empowering journalists to do their (traditional) jobs better instead of moving on to the next stage built around a stronger commitment to capitalize on the growing socio technical potential.”

In a similar vein, Garrison (2001) examined hundreds of newspapers adoption of technology in the U.S. between 1994 and 1999 applying Everett Rogers' approach to

the Diffusion of Innovations Theory. Garrison's longitudinal study demonstrated that diffusion of innovations in newsrooms caused a significant redefinition of newsroom roles and occupational categories thanks to the introduction of computers and online search engines. In what is more relevant to this particular study, Garrison highlights the reasons managers gave for non-adoption of new technologies:

Often, non-adoption decisions are made because of a perceived low rate of diffusion, bad information, and a bad price and bad value ratio, Mahler and Rogers (1999) observed. Reasons cited for not adopting online resources in newsrooms included reluctance by management to lead toward adoption, lack of resources to invest in new technology, lack of training, little or no access to the new technology, lack of expertise, fear of lost time required to learn, and not enough time in the work schedule (Garrison, 1998). A news organization that embraces the web and other forms of online information-gathering can overcome these barriers. (Garrison, 2001, p. 234)

Following up with Garrison's extensive work, Hansen, Paul and Neibergall (2003) surveyed newsrooms and obtained a baseline on six critical areas of information practices: access, training, quality, archiving, revenue, and alerts. They found out that, aside from access, which had been improved by online services and libraries, newsrooms still need to work on the remaining five, especially revenue and alerts. Even access may still be an issue if other categories are not properly developed:

For example, if journalists have comprehensive access to information resources but little opportunity for training in how best to use them, it is a diminished opportunity. Information companies lacking the process to ensure the accuracy and quality of their information products are not serving the public well. (Hansen, Paul, & Neibergall, 2003, p. 46)

According to Abernathy (2014), for mainstream community newspapers to survive and thrive in the digital era, they need to concentrate investment on content creation and aggregation based on how rapidly their customers' habits and expectations are changing. Abernathy studied the cases of community weeklies employing new technologies and multimedia platforms. Some of the presses cited by her include: *The News Reporter* (one of the first, small, non-daily newspapers in North Carolina

to establish a website in 1998 and later a Twitter feed), *La Raza* (a Spanish-language weekly), *Hampshire Review*, *The Pilot*, *The Polish Daily News*, and *Columbia Daily Herald*.

Muse Abernathy wrote about the results of a 2009 survey conducted by the University of North Carolina at Chapel Hill that reflected changes in the readers' use of new media. She stated, "like their city kinfolk, rural residents are addicted to texting, Facebook, and smartphones. They estimated that they were spending two hours or more daily with new media, with cellphones and smartphones coming in first followed by social networking, searches, and e-commerce done on desktop computers."

The increase of the online audience through mobile devices constituted a relevant aspect treated by the Pew Research Center State of the Media Reports (2016), which indicated that for 39 of the 50 newspaper websites examined in 2015, "the number of unique visitors on desktop [sic] fell, with 28 showing a drop of at least 10%. Conversely, unique visitors on mobile rose for 43 of the 50, with 35 showing a 10% or greater increase." Indeed, Hendricks (2010) wrote that for traditional media outlets, the implications of new media are far-reaching: "New media technologies are being integrated into existing industry operations through media convergence, but in some situations, new media are actually replacing traditional media operations both within organizations and consumers." Furthermore, Pavlik (2013) — citing Heather Scofield — wrote that early evidence suggests that "the digital innovation by traditional print news media is successful in not only building an audience but also generating online advertising revenue."

By 2016, the situation remained similar to the trend perceived in previous years. For example, as of early 2016, just two-in-ten adults in the United States often obtained news from print newspapers while in 2013 the percentage was of a 27%: "when compared with print, nearly twice as many adults (38%) often get news online, either from news websites/apps (28%), on social media (18%) or both. (81% of adults ever get news on these online platforms.)" Age also represented a determinant factor in the way that readers get their news on mobile devices instead of desktop computers: "Fully seven-in-ten of those ages 18-29 either prefer or only use mobile for getting their digital news, compared with 53% of those 30-49, 29% of those 50-64 and just 16% of those 65+."

Findings suggest that professional culture – articulated in skills, ideas and practices – acts as a network that weakens the potential impact of technology towards

innovation and audience-oriented models of journalism. The results point to the conclusion that the internet and related tools are seen as empowering journalists to do their (traditional) jobs better instead of moving on to the next stage built around a stronger commitment to capitalize on the growing socio technical potential.

Regarding the African-Americans, survey data from 2013 referred that this population was more likely than web users overall to access social media tools such as Twitter and Facebook.

Two digital areas where the (B)lack news media may find a large audience are [on] social networks and in the tablet realm. While African Americans still access the (I)nternet at lower rates than the (W)hite population [70% of African Americans say they use the (I)nternet, compared to 81% of non-Hispanic (W)hites], those on the (I)nternet are more likely to use social networks like Facebook, Google+, Twitter and Instagram than whites and the population over all, according to 2012 surveys from the Pew Research Center.

A Nielsen study (2015) indicated that during a time when digital is dominating news media consumption, African-American consumers still trust print with 52% of the Black audience “more likely to be voracious readers of magazines, which is 30% higher than the general population.” At the same time, the research indicated, African-American consumers have embraced technology, are avid users in this space, and have become vocal mainstays in popular social media and blogging channels.

Smartphone penetration is 81%, slightly edging the total population by 7%. On a monthly basis, (B)lacks spend close to 56 hours using apps or mobile Internet browsers on their smartphones and about two and a half hours watching videos on their smartphones. Additionally, 81% of African-Americans are more likely to show support for a favorite company or brand using social media, and 76% are more likely to share opinions by posting reviews and ratings online.

STATEMENT OF RESEARCH QUESTION AND METHODOLOGY

Research Question

How have Blackpress newspapers *The Weekly Challenger*, *Daytona Times* and *Florida Courier* adopted technology throughout time?

Case Studies

The authors selected *The Weekly Challenger* as the only publication directed to the African-American community in Pinellas County, a metropolitan county in the Tampa Bay region along the west coast of Florida. *The Daytona Times* shares a similar foundational history with *The Weekly Challenger* and also targets one county, Volusia, on Florida's east coast, while the *Florida Courier* changed into a statewide weekly publication, in 2006, this transition introduced the paper to new types of challenges (Deggans, 2005). The researchers spent time observing the workflow of *The Weekly Challenger* to observe how the newsroom, which is actually the publisher's home, worked with technology and conducted in-depth interviews with the editor of the *Daytona Times* and *Florida Courier*, Jenise Morgan, reporter Andreas Butler, photographer Duane C. Fernandez and designer Lorrie Bellinger, followed by interviews with the publisher of *The Weekly Challenger*, Lyn Johnson, and the web and social media manager, Kaye Brown. The observation and all interviews were conducted in 2017 with the interest of having a general idea of technology adoption in African-American press rooms. In addition to the interviews, the authors also reviewed oral history pieces and old newspaper articles of the three publications.

Semi-structured Questionnaire

A semi-structured questionnaire was developed to keep maintain the comparison between all three news organizations consistent.

- 1) Open-ended questions for a category: Describe how you (perform an action/activity in this category).
- 2) Probing questions about technology: What (technology: hardware/software) do you use to perform the action/activity? Describe how you use it.
- 3) Probing questions about history of an action/activity: How was this action/activity originally performed?
- 4) Probing questions about the history of the use of technologies: When did you first start using this (hardware/software) to perform this action/activity?

How did that change the way you perform the action/activity?

5) Open-ended requests for further details: What else can you tell me about this (activity/technology)?

Online structured questionnaire

With the goal to develop a baseline for comparison and to test the viability of other research methods, a qualitative questionnaire was developed based on the findings of the case studies. This structured online questionnaire asked specific questions about digital media adoption and usage, the ability of the staff to use digital media (skills, time availability, enough staff members, etc.) and other specific questions related to obstacles for adopting digital media tools.

The distribution list was created from the list of Black Press newspapers on the NNPA website and the Florida Black-Owned Media (FLABOM). Filtering for only currently working news organizations with working contact information, the questionnaire was submitted to 52 companies (N=52), with weekly reminders for three weeks, which resulted in 7 completed questionnaires (n=7). From the initial 163 members listed on the NNPA's website, 14 have been inactive for years. Eight didn't have any web presence or contact information to be found. A few had disconnected phone numbers. As the authors called, many others would hang up or say they believed the researchers were scamming them. Usually, this part wouldn't make the paper to be presented, but this reaction was predicted and expected due to well-documented and justified historical, cultural and social issues identified earlier in this paper for a natural suspicious reception of strangers trying to acquire information from them. It is an essential note as this affects how researchers need to proceed in the future if they are to obtain accurate and fair data from these companies. This will be addressed in the Discussion section.

FINDINGS

Online questionnaire

The online questionnaire indicated a variety in the type of browser, version, operating system and resolution used by these organization. Three of the respondents use Safari, three MSIE, and one Edge. Regarding the operating system, three of these entities use Macintosh, one Windows NT 10.0 and three Windows NT 6.1.

The location of the organizations' headquarters also varies. The places: Mobile, Alabama; Tampa, Florida; Charlotte, North Carolina; Omaha, Nebraska; Odessa Florida; Indianapolis, Indiana and Los Angeles, California. The questionnaires reported that five of the newspapers are a family owned business. Regarding each organization's type of audience, responses also vary although African-Americans communities are their primary targeted public, with only one paper directed, on a 15%, to the White population and 5% of other races. The difference is evident in the targeted reader's ages with one newspaper directed primary to African-Americans over 50 years old.

In the question regarding the respondents' role in the organization, multitasking was evident. Five of the surveyed were employed as editors, but are also in charge of proofreading, writing, publishing, designing, photography, and personnel. Only one was a CEO, in charge of the overall effectiveness of operations and administration. While another one was an account executive.

Regarding the number of people employed by their companies the amount also varies. One publication listed "more than 30," while the others were within the range of 30 to eight staff members, freelancers and associates working either for their organization or with the organization.

With the main distribution platforms, four of respondents indicated a weekly print newspaper. Only one pointed out that their primary platform is an online multiplatform and two indicated other types of distribution. One of them a combination of a monthly print newspaper, a weekly website, and a daily social media and internet radio station. The other one is a print newspaper and a monthly minority business magazine. In regards to how well the organizations use online digital media platforms and technologies, two stated that they use Snapchat "extremely well," one "moderately well," and four don't use it. Twitter and Facebook were the most used social media, while some use Instagram and video platforms (i.e., Youtube, Vimeo, etc.) "moderately well," and others don't use it.

Four of the newspapers don't use any digital security system (i.e., Securebox, Signal, etc.) or data visualization program (i.e., Tableau, Infogram, etc.). With Analytics, Proprietary Apps for IOS, Android and Windows, Cloud data management systems and Website builders the responses between organizations that use it and others that don't.

With the use of social media, six of the respondents indicated that they started using it as a regular adopter, specially after seeing their success in the audience. Some of the newspapers used Facebook and Twitter more than their news cycle, while others used it with their news cycle.

The biggest challenge, according to the surveyed, consisted in adopting new technologies; teaching old staff to employ social media and other digital media; keeping content updated and posted; lack of staff; and the cost on acquiring and implementing new technologies.

Case Studies

The study conducted questions regarding information gathering, production, publication, and organizational methods. The three weeklies run with a staff of fewer than ten persons. Their editors expressed multiple jobs, apart from editing. In spring 2017, *The Weekly Challenger* runs with a staff of two employees. *The Daytona Times* and, her younger sister, *Florida Courier*, share part of their staff. The papers also rely on freelance reporters and occasionally, on hired photographers. The journalists, designers, and photographers, except for the *Times* and *Courier* editor, reported not having any written contract, nothing other than a verbal agreement. The newspapers' print version comes out every week, with different days depending on the paper. None of the publications owns an office, and their staff works from their homes, communicating through email and phone calls, with occasional face-to-face meetings.

The newspapers reported to use Google and Yahoo to gather information, but all of them write their articles from information directly gathered by the journalists, public phone call or press releases. Most of their background research is done on other newspapers websites. All of the papers rely heavily on the other reporters to do one-on-one interviews. Other tools employed were digital recorders, notebooks and photos taken by staff. *The Times* and the *Courier* are subscribers of Tribune News Services, a provider of stock photos, but *The Challenger* does not employ this method. None of the newspapers used scanning methods, recording apps or other digital or smartphone tools. The staffs reported using wireless and cellular telephone networks to do their work, as well as hard-wired. Johnson reported that to write her articles, she presently uses Microsoft Word and Google Documents. Morgan relies on Word. Regarding layout and design software, Bellinger explained that she uses QuarkX-Press, Photoshop and an iMac for graphic design. *The Daytona* and *Florida Courier* use InDesign, but their photographer does not use Photoshop.

All of the publications use social media for promotional purposes. (Facebook, Twitter, and YouTube), as well as email marketing (newsletters). As of March 2017, *The Challenger* uses Google Analytics to measure its online metrics. The hardware used to produce the stories (computers, cameras, recorders) belongs to each staff member, except for the Mac used for

The Weekly Challenger design. None of the staff uses fax machines in any appreciable way. When the *Courier* and *The Times*' editor mentioned that "all of us use Macs," she meant the people that worked on the production side, such as the publisher or the graphic designer. Whereas that, the reporter mentioned having an old Gateway machine.

The Weekly Challenger has a mobile app, but it was not clear for the other newspapers editor if they had one. The three papers hire printing facilities to print their work. *The Times* and the *Courier* maintain a Dropbox account and also use FTP as a backup site. *The Challenger* does not employ these cloud storage services.

DISCUSSION

The process of developing and distributing the online questionnaire after completing the case studies was particularly meaningful to this research. Many times, the researchers heard from people working in Black Press news media that getting responses for our questionnaire would be very hard primarily due to a lack of trust, but also due to the busy schedules of editors, publishers and reporters in these companies. As in all African-American history, the Black Press has also experienced a long history of abuse and aggressive tactics used against their organizations. Nonetheless, it was essential to test empirically if it would be feasible to create long-distance instruments that could generate generalizable data in the future. The result of multiple attempts, even when negotiated by common acquaintances and intermediaries, was as expected and foretold. This matters as, instead of relying solely on the historical and anecdotal data, it was possible to at least test a few pathways for future research, demonstrating that research done with victimized populations that have in any number of ways requires building trust, cultural learning, and more in-depth methodological conversations that are less appealing to researchers who are time and resource constrained. By its nature, it creates a research bias against engaging with people and organizations in a process that may attract fewer funders and result in fewer publications at the same time that may prove too complicated and taxing for a semester or even year-long projects.

The online questionnaire' responses show that even though many of these news companies may be at different stages of technology adoption in the newsrooms, almost all of them have been following a haphazard or non-structured process in adopting them. Complementing the case studies findings, there seems to be some thinking about technology adoption, but no structured process in planning it for the

long term. *The Weekly Challenger* made most of its jump to a more digital platform in 2001 when they had an editor who was knowledgeable and fluent in newsroom technology. Others adopted free tools, such as Facebook, in the same way, consumers would. They all agree that costs (money), training (knowledge), and availability of personnel (time) are the main barriers to adoption. The findings from the case studies seem to show that there is very little being done in thinking of technology of ways to solve the obstacles they have identified, which would be a significant next step for this research. Transforming technology itself in ways to improve profits and profit margins, obtaining knowledge and creating time availability would likely benefit these companies while also bringing them up to speed with the technology they currently miss or don't use to its full potential.

CONCLUSION

The results of this study indicate that there is a significant gap in the research about the Black press and its use of technologies. It also identified many obstacles to many traditional forms of analysis and sampling. The findings suggest that case studies, ethnographies, and other qualitative and critical methods may be needed to establish lines of trust, which, in the future, may create the foundations for generalizable research. Future researchers working on this topic could focus on understanding how, not only the Black Press but the African-American community as a whole, has managed or coped with constant changes in technologies and related training.

The Courier case, with all of its staff working from different locations, could lead to new studies regarding the impact that new technologies have in the new organizational models in which many of these papers now operate within.

Other challenges to be addressed include the reliance on sources such as Google due to the cost of obtaining syndicated news. The comfort level that reporters have with working outside of the newsroom with limited resources, such as lack of Internet at home, or trying to verify and authenticate information from a source that may not be located within arm's reach of the reporter, but emanating instead, from the other side of a tweet.

There is also a considerable amount of historical work that could help to trace the road traveled by these press survivors and to figure out where their steps will lead them. Researchers need to find ways to and examine these papers' organizational

work and evolution from inside the newsrooms (or wherever the work happens) to understand and preserve their history while also paying attention to how they move forward in the 21st century.

Finally, as mentioned in the Discussion, obstacles to research resources need to be addressed. This action should be taken to attract and encourage new researchers to assume on the challenge of creating a meaningful body of investigation that may result in a better and stronger Black Press in the United States and also generate knowledge that can be used to help alternative media elsewhere. More research on this topic is needed, but even more urgent is the development of the conditions for this research to be developed. Developing access to these fundamental news media outlets takes time and resources. Granting institutions need to be more intentional about creating not only call for proposals, but also working with the Black Press in making it easier for the media outlets to have the conditions to be researched. As seen in this study, a historic newspaper in St. Petersburg has closed its office and it is operating from the publisher's home, for example. That type of access requires a different level of trust from people who have been historically exploited. This study is just the very first step in a must needed and urgent line of inquiry.

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Click to Feed. Mobile Phone Applications' Role in Improving Food Access in Romania

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Abstract

This paper explores the role of digital tools in surfacing and encouraging action against instances of social injustice in Romania, with a focus on food access. Starting from an analysis of developers/owners' motivations in creating a series of mobile phone applications combatting food waste, this research looks at digital tools' role in promoting the redis-

tribution of surplus food items that would otherwise go to waste. While acknowledging the limited scope of this endeavor, it is my suggestion that this form of Internet-based food activism is in its incipient stages in Romania and that it does not necessarily aim or have the force to induce social change for the moment.

Keywords: Food access, food justice, food aid, surplus redistribution, food sharing

Clique para se Alimentar. O Papel das Aplicações Móveis na melhoria do acesso aos alimentos na Roménia

Sumário

Este artigo explora o papel das ferramentas digitais no aparecimento e no incentivo à ação contra instâncias de injustiça social na Roménia, com ênfase no acesso a alimentos. A partir de uma análise das motivações dos desenvolvedores/proprietários de uma série de aplicativos para telemóvel que combatem o desperdício de comida, esta pesquisa analisa o papel das ferramentas digitais na pro-

moção da redistribuição de excedentes de alimentos que seriam desperdiçados. Embora reconhecendo o âmbito limitado deste esforço, é minha ideia que esta forma de ativismo alimentar baseada na Internet esteja nos seus estágios iniciais na Roménia e que não visa necessariamente ou tenha força para induzir, neste momento, mudança social.

Palavras-chave: Acesso a alimentos, justiça alimentar, ajuda alimentar, redistribuição de excedentes, partilha de alimentos

This is an exploratory, qualitative study of the extent to which digital tools available to the Romanian public help improve access to food for those at hunger risk by allowing a redistribution of surplus resources. This research focuses on four mobile phone applications self-described as combating food waste in Romania. The findings reflected herein are based on semi-structured interviews conducted with the developers/owners of such applications, as well as on my fieldwork as volunteer within a charitable organization that runs a soup kitchen providing cooked meals for a group of homeless and undocumented people in Bucharest. The applications considered here are the only digital tools of this kind available to the Romanian public; food-saving mobile applications created by Romanian developers, but not available to Romanian consumers are outside the scope of this research.

With the caveat that more research is necessary as the local context around food waste and food redistribution evolves, it is my suggestion that, despite being able to set up communication channels between potential donors and beneficiaries, mobile phone applications' role in improving food access is severely limited by the legislative, bureaucratic and infrastructure impediments that stand in the way of creating a sustainable circuit of surplus redistribution.

FOOD WASTE AND HUNGER. A THEORETICAL BACKGROUND

Despite their relatively short history under the Food Studies umbrella - the first attempt to “[...] collectively [...] frame potential sociological approaches to understanding food waste” (Evans, Campbell, & Murcott, 2013, p. 5) happened just five years ago - food waste and food saving have fuelled a consistent number of research initiatives.

One such initiative focuses on food saving in Australia, where the “freegan” or “dumpster diver” communities appear to be the adepts of an “alternative ethics of consumption” (Edwards & Mercer, 2013, p. 175). Acting within an environment which has the characteristics of what previous research has dubbed an “autonomous food space” (Wilson, 2012), “freegans” and “dumpster divers” use their senses in order to recuperate discarded food items that would officially be unacceptable to NGOs or other organizations that might otherwise use them to feed those living in precarious circumstances (Edwards & Mercer, 2013).

Within the context of consumers being empowered to decide what to buy and eat, researchers have also focused on food labeling for food safety purposes, an element whose role evolved from a proof of freshness to nutritional content indicator and, finally, to a guarantee that the respective products are fit for human consumption (Milne, 2013). Also, discussions around the reliability of mentions such as “expiry date” and “best before” brought about a debate as to the relationship between food safety regulations and consumers’ own practical experience in assessing the state of and risks associated with consuming perishable food (Milne, 2013).

Efforts have also been made to better understand the power relations, institutions and social conventions at work in the production, representation and regulation of food waste, with a focus on the role that food aid, technological developments and legal/political factors have in generating such waste (Gille, 2013).

In addition to that, the mechanisms whereby discarded food that has not reached the bin yet is construed as “capitalist surplus” rather than as a mere disposable matter have also sparked interest (O’Brien, 2013). O’Brien’s analysis of the way waste is “imagined”, and regulated within the framework of the European waste policy leads to the conclusion that:

alternative arrangements for exploiting materials of all kinds [...] involve *un-sanctioned agents* of transformation and distribution of material residues whose actions negate both the compliance mechanisms that effect the ‘lasting transformation’ of non-wage labour into wage labour and the normative mechanisms by which capitalist exchange accrues value for capitalists. (p. 207)

The theoretical background outlined so far is relevant for the purposes of the present research in that it sets the stage for two lines of inquiry: who decides that a food item is still fit for consumption and when (the regulation versus senses dilemma), and, at what point, if ever, a food item in danger of becoming waste escapes its market value “curse” and can move freely, to be given away, as a gift or donation.

Another concept relevant for this discussion is that of “distributional justice”, which sees food access as a matter of politics and policy, and a responsibility of the State structures, that should not be mistaken as covered by the occasional, targeted food charity efforts undertaken in soup kitchens, for instance (Riches & Silvasti, 2004, pp. 3-4). Two other perspectives add to the variety of approaches in the matter of food access: combatting poverty and hunger is a matter of getting support from

one's community and access to a minimum income covering basic needs and access to food is tightly connected to the economic development of the community and to the sustainability of its food production and distribution systems (Levkoe, 2006).

This study takes over some of the issues under the distributional justice umbrella, namely: the question of responsibility towards the environment and towards those at hunger risk when setting forth a food waste management framework and the issue of long-term sustainability of a system which aims to redistribute food surplus to those in need. Also, the matter of community support in hunger-combatting efforts was considered when exploring the application developers/owners perception of a possible tension between the commercial and the charitable aspects of reducing food waste.

Several concepts have come to clarify the conditions under which the right to food is adequately exercised. "Food poverty", for instance, encompasses the underlying state of hunger and the context of food security/insecurity (Riches & Silvasti, 2014, p. 5). Being food poor is also frequently associated with a disregard for one's dignity and right to choose, especially when it is countered via emergency or alternative food aid actions: "Food banks, soup kitchens and breadlines are not socially accepted ways to acquire food for oneself or for the family in the developed world, nor is begging, shoplifting or dumpster diving, that is searching for thrown away food in skips." (Riches & Silvasti, 2014, p. 6).

Following the same logic, food security exists "[...] when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life" (Riches & Silvasti, 2014, p.6); on the other hand, "food insecurity" involves "[...] limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways." (Riches & Silvasti, 2014, p. 6).

Debates over the compatibility of emergency food aid systems and the principles under the right to food umbrella have pointed out that beneficiaries of such systems are maintained in a state of dependency because the underlying cause of their lack of access to food – namely social inequality – is never actually tackled (Poppendieck, 1998). As pointed out by Tarasuk & Eakin (cited in Lambie-Mumford, 2017), these systems also deprive beneficiaries of dietary options as well as of all the other benefits of the paying consumer status:

[...] [in] the mainstream food system [...] affluent consumers can choose from literally thousands of different (or seemingly different) food products, marketers bombard them with claims about the virtues of particular product ingredients, and values such as visual perfection, freshness and convenience reign supreme. (p. 79)

The present paper takes over and builds upon two elements pointed out in the academic literature dedicated to emergency food aid referred to above, namely: the social acceptability of food received in times of need as well as the absence of choice in the opposition consumer vs. food aid beneficiary. These were starting points for an exploration of informants' perception of the value/quality of food sold on a discount, of their personal convictions related to the provision of food aid as a community's duty towards its members and of the possible reflection of those convictions in the way the analyzed food saving mobile phone applications were built and function.

FIGHTING FOOD WASTE WHILE FEEDING THE HUNGRY IN THE DIGITAL WORLD

Communication and Activism

Two main directions are distinguishable in the discussion around the role of information technology in enabling or influencing access to food: digital tools' role in enhancing communication speed and scale, and their contribution in helping aggregate communities and driving action.

On the communication side, social media platforms have been singled out as essential tools in blurring the lines between "professionalism versus amateurism, publicity versus privacy, and business versus pleasure" (Rousseau, 2013, p. xiii) when it comes to discussing/assessing one's own experience of cooking/eating. In addition to "some sort of validation and appreciation" that food-themed social media interactions offer, they have been found to help create a sense of community the manifestations of which sometimes exceed the gastronomic realm, as followers and fans express their support in difficult situations experienced by prominent online socialites (Rousseau, 2013, p. 36).

Laying a stronger emphasis on the idea of common action ensuing from the creation of a community with its particular agenda, "digital food activism" (Schneider,

Eli, Dolan, & Ulijaszek, 2018, p. 3) sees digital tools as helping “[...] redefine and/or expand food transparency, and [...] disseminate otherwise ‘hidden’ information to citizen-consumers who may share these concerns.” (Schneider *et al.*, 2018, p.1). Moreover, this form of activism can transform food into a “means to broader political action”, going as far as “changing the market relations” by providing consumers with information that will influence their food purchase habits and preferences (Schneider *et al.*, 2018, p. 215).

Narrowing the focus to food access and poverty, a study into Twitter’s role in raising awareness and offering solutions to food scarcity issues in Australia has pointed out the microblogging platform’s role in reflecting both the fallacies of communication across the spectrum of actors interested in combatting hunger (influencers, NGOs, media, etc.) and the variegated nature of the issues associated with the right to food umbrella theme (Mann, 2018). While reflecting on how “[...] digital media platforms and applications contribute to the shaping of public issues and the democratisation of public spheres”, this study also points out the need for further research to also capture “marginalized” voices as well as their perspective on key food scarcity issues (Mann, 2018, p. 180).

Though quite limited in scope at this point, the present research could develop a stronger connection to the digital activism domain, but only as the digital tools considered here start making a difference in the Romanian public’s perception about food waste and food surplus redistribution. Defined as “[...] an organized public effort, making collective claim(s) on a target authority, in which civic initiators or supporters use digital media” (Edwards, Howard, & Joyce, 2013, cited in Schneider, Eli, Dolan, & Ulijaszek, 2018, p.10), digital activism remains, for the moment, too big of a hat for these tools. Instead, a more appropriate theoretical architecture that would support the case studies included in this paper would be a rudimentary form of “Internet-enhanced food activism”. This concept would combine food activism, seen as “[...] efforts by people to change the food system across the globe by modifying how they produce, distribute, and/ or consume food” (Counihan & Siniscalchi, 2014, cited in Schneider *et al.*, 2018, p. iii) with one of the terms in the Internet-based vs Internet-enhanced activism dichotomy (Vegh, 2003, cited in Schneider *et al.*, 2018, p. 8). Given that these tools aim to educate the Romanian public about what it means to redistribute one’s own surplus, and to trigger a re-categorization of food that is about to expire from waste/garbage to usable food resources, it could also be argued that they are also on their way to forming “[...] infrastructures that give rise to on-

tological experiments” (Jensen & Morita, 2015 cited in Schneider *et al.*, 2018, p. 3).

The elements related to food-themed digital communication and activism informed the discussion about the choice of qualifiers when presenting, from a marketing perspective, the food items distributed via the Romanian food-saving apps (food on discount, saved/recovered waste, fresh food at affordable prices, food deals, etc.). This was also the background of questions related to the application owners/developers own perception and, possibly, use of food going through an accelerated sale process.

Digital Maps and Food Access

An important aspect of digital tools’ role in enabling wider access to food is the existence of digital maps highlighting offline sources of affordable food.

For the so-called “food deserts” - urban areas with inadequate access to financially accessible and healthy food (Cummins & Macintyre, 1999), - these maps were thought to be a solution, as they would help solve the diet-driven health issues experienced by precarious communities. One digital step further, proposals have been made to combine these maps with a form of “geographic tracking on daily mobility created using Global Positioning System [...] software on a smartphone” (Shannon, 2015, p.85) thereby acknowledging that low-income households rely on more factors than the mere spatial proximity to a store or a market in devising their food procurement routines and preferences (Shannon, 2015).

Digital maps are also at the core of the various food sharing variants that exist under the vast sharing economy umbrella. A study commissioned by the UK Minister of State for Business, Enterprise and Energy pointed out the existence of several digitally-enabled activities focused on the production and distribution of affordable food (Woskow, 2014). These activities rely on some form of digital map to connect food producers to beneficiaries in different circumstances: land-sharing for those who want to grow their own food, connecting buyers to farmers directly, for order placement, without the need for a store or a market, sharing one’s own cooked meal or an extra portion with the elderly in the area, etc. (Woskow, 2014, p. 36).

Digital tools also play a role in satisfying a concern for the sustainability of food chains – in addition to waste reduction - as surplus is shared with or redistributed to those in need. Under the “sustainable innovation that meets precarious lifestyles” theme (Broadbent & Cara, 2018, p. 7), a joint UK and Italy study lists several categories of projects that use a digital platform to ensure that overabundant food reaches

“fragile people” (Broadbent & Cara, 2018, p. 8). This list contains, among others, mobile applications providing information on available stocks to be donated by businesses (Olio, Foodcloud, Bonapp, the Real Junk Food Project), as well as urban foraging and growing maps (Lend and Tend, 3000 acres, Sow the City, the Big Dig, Plantez chez Nous) (Broadbent & Cara, 2018, p. 8). Relying on prior findings around the transformative power of networks on markets and freedom, Broadbent and Cara point out that “the open, distributed, connected, nature of the web” works “as a way to dis-intermediate the relation between producer and customer” and helps “create new networks of exchange and knowledge, or [...] blur the boundaries between producers and users” (Benkler, 2006, cited in Broadbent & Cara, 2018, p. 3).

As all of the applications considered in this study aim to better connect, via digital maps, those who make/own food and those who need it, it was important to understand, in the discussions with informants, in their capacity as designers of the food procurement experience, what options, if any, those maps offered users for the customization of their searches based on their food preferences/search history. Another important area to explore, in this context, was to what extent Romanian food-saving applications are profit-driven and how much room for free-of-charge food sharing is left in their current or future development plans.

FOOD SURPLUS. COULD IT FEED THE HUNGRY?

How Do Others Do It?

Within the global digital landscape dedicated to redirecting food surplus to those in need, one of the most important projects, both due to its scale and ambitious purposes, is the ReFed initiative in the US, which brings together tech, business and political actors to find innovative ways of reducing food waste. One of the featured directions of interest on the ReFed website is that of “donation-matching software”, which would not only facilitate the documentation of large food donations coming from companies, but also, the recovery of smaller batches of food available at restaurants, cafes or supermarkets, the handling, storage, transportation and distribution of which would be too expensive for NGOs, but worthwhile for individuals looking for affordable food (“Donation Matching Software”, 2018). Such software is not completely absent at this point, but it could use further development. For instance, relying on the financial support coming from Google, Feeding America, “the larg-

est hunger-relief organization in the United States”, operates an online marketplace which connects food donors to food banks and other such food distribution organizations (Feeding America, 2014). On a smaller scale, ReFed promotes several food recovery applications - Spoiler Alert, Zero Percent, Copia, Community Plates, and Food Cowboy – which help private individuals get access to excess food that businesses are willing to donate (“Donation Matching Software”, 2018).

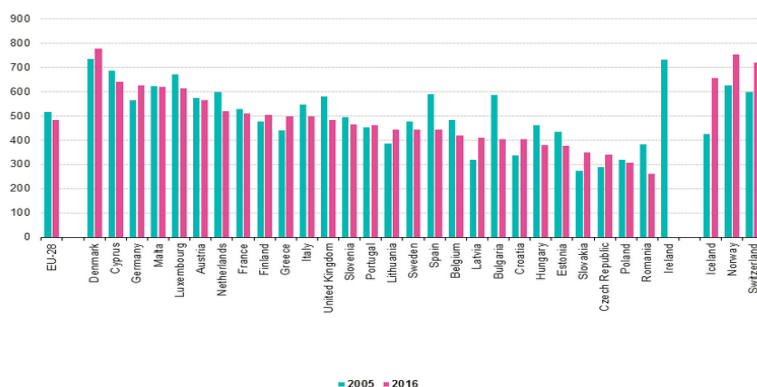
Saving food by selling it at a discount before it goes to waste is a business idea that caught on in other parts of the world. Sometimes incorporating a stock management component, which helps businesses keep track of expiry dates and apply discounts as soon as possible, these applications support a wider access to food by temporarily lowering food prices. JustNow, which enables access to discounted fresh produce in supermarkets, and Chowberry, which generates discounts for a wider variety of food items (Lo, 2018) are both based in Africa; a similar application, Zéro-Gâchis (“Zéro-Gâchis, qu’est ce que c’est ?”, 2011-2016) , is available to French customers.

Selling cooked food at a discount is another strategy that works across Europe. Some examples are OptiMiam, available in France (“L’achat du ‘juste à temps’ pour réduire le gaspillage alimentaire”, 2018), Too Good To Go, which covers Belgium, Denmark, France, Germany, Netherlands, Norway, Switzerland (with a global version as well) (“We’re Too Good To Go”, n.d.), and YourLocal, available in UK, Denmark and Germany (“Fight food waste and support local shops”, 2018).

Romania: The Ecological Perspective

Though progress has been made in this direction, there is still no clear understanding of the proportions of the food waste phenomenon in Romania. As shown in Table 1, according to data collected at the level of the European Union (data available for the year 2016, but extracted in April 2018, with the next update scheduled for July 2018), Romania would rank last but one in point of municipal waste per capita (Eurostat, 2016).

Table 1 - Municipal waste generated by country in 2005 and 2016, sorted by 2016 level (kg per capita)



Reprinted from: http://ec.europa.eu/eurostat/statistics-explained/index.php/Waste_statistics ©(1995-2013) by European Union

However, this data covers, according to the Eurostat definition, “[...] waste collected by or on behalf of municipal authorities and disposed of through waste management systems,” “[...] mainly [...] waste generated by households, although it also includes similar waste from sources such as shops, offices and public institutions.” (Eurostat, 2016). Therefore, no specific EU-level view of food waste is available for the moment either.

Food Waste Romania, a project financed by the Swiss Romanian Cooperation Program and developed together with the Mai Mult Verde Association, offers a rough estimate of this phenomenon, stating that approximately a third of the Romanian food products, a total of 2.55 million tons, get thrown away per year (“What is Food Waste?”, 2016). However, these figures are to be taken with a grain of salt according to a note on the methodology behind these estimates that appears on the Food Waste Romania dedicated website:

At this moment, there is no large-scale study done on over 1 million people [in Romania]. The most recent figures are based on surveys and estimates provided by various players in the food production industry. [...] For household waste, the most accurate estimate is a study done in Great Britain, covering 2,000 households. (“What is Food Waste?”, 2016)

In 2017, Mai Mult Verde Association and the Resource Center for Civic Participation (CeRe) released the results of an experimental study on food waste at consumer level, which reveals two key facts behind the 129 kilograms of food thrown away by each Romanian per year (as per data provided by the Romanian Ministry of Agriculture for the year 2016) (“Romania Against Food Waste,” 2017, p. 5). On the one hand, the top two positions in a hierarchy of consumer-generated food waste in Romania are occupied by cooked food and fresh produce (fruits and vegetables) (“Romania Against Food Waste,” 2017, p.15); on the other hand, the main reason why these categories of foods go to waste is excessive buying (“Romania Against Food Waste,” 2017, p. 16).

Romania: The Legal Point of View

Combatting food waste while also tending to the needs of those at hunger risk is a relatively recent preoccupation of the ecology-minded population in Romania. From a legal point of view, this is still an issue pending an official resolution as the road from project to reality of the actual mechanisms whereby food producers/distributors/retailers are to dispose of their food surplus so that it does not become a source of pollution is quite sinuous. The Romanian Parliament adopted an anti-food-waste law in the early months of 2016 but postponed its enforcement until December 2017. A new delay was caused by the legislators’ difficulties in setting forth the mandatory accompanying set of norms of enforcement, so that this piece of legislation was to come into effect in July 2018.

In brief, the Romanian anti-food waste law provides that a system be devised for the monitoring of the food surplus (defined as food about to reach its expiry date) that economic operators (food manufacturing, processing, distribution, hotels and restaurants, as well as all businesses offering food services) have to deal with, and that such food be offered for sale at a discount or voluntarily registered for redistribution (via a centralized State Authority) to NGOs and other non-profit entities which specifically provide welfare services. In this scenario, the window of opportunity for donations would start as early as a few days before the food’s best before date and it would end as late as 2 days to 2 weeks after such date (depending on the food category), provided that it is still fit for human consumption. The food offered via this system would be legally construed as a gift or a form of sponsorship. If no beneficiary is found for such donations, the concerned businesses would have to reach out to organizations catering to the needs of animals. If no animal shelter or other such or-

ganization commits to taking over the respective food, then measures are to be taken for the waste matter to be turned into compost.

One of the aspects that sparked controversies in the discussions between the Romanian Minister of Agriculture and Rural Development, representatives of the food manufacturing/food retailer industries and the social actors potentially interested in taking over food surplus is the fact that, in its earlier versions, the law offered the economic actors, NGOs, associations and social enterprises the possibility of selling food that could/has been donated in this way. To this end, the law initially set price ranges that both sides were to abide by. Economic actors might, for instance choose to offer NGOs food that fell under the scope of the anti-waste law at a “[...] a maximum of 3% + VAT of the purchase price, in the case of retailers, and of 3% + VAT of the manufacturing price for manufacturers and processors” (“Law 217 of 2016 concerning the reduction of food waste,” 2016). On the other hand, the entities on the receiving end of food donations would, in their turn, have been allowed to resell the respective items for “[...] a maximum of 25% + VAT of the purchase price, for foods taken over from retailers, and for a maximum of 25% + VAT of the manufacturing price, for food taken over from manufacturers or processors.” (“Law 217 of 2016 concerning the reduction of food waste,” 2016).

During negotiations with the legislators, fears were expressed that this waste reduction mechanism might be transformed into a tax avoidance scheme, that fraudulent non-profit entities might disregard the safety of food distributed so close to its expiry date and that the economic entities that own this food might see their property right injured by legal provisions “forcing” them to simply give it away after a specific point in time.

Two points of contention seem to surface here: price and trust. As long as the food still bore some commercial value, expressed through the setting of a price, strong competing arguments made commercialization fair game for both economic and social actors. It appears that the provision allowing social actors to sell donated food is the result of a proposal made, among others, by Simon Suitner, manager of the Somaro social store in Bucharest. Suitner aimed to ensure a form of financing for enterprises like his, as selling donated food would allow him to cover the operating costs of the store he is managing. In an interview with him taken during the summer of 2017, he also invoked reasons having to do with a respect for beneficiaries' dignity (paying, even the smallest price, allows them to choose what they eat) and with promoting a form of responsible consumption (a budget limitation would encourage beneficiaries

to think more about their dietary choices as opposed to being handed over any food as a form of donation).

This perspective clashes with that expressed by the representative of Romalimenta, the Romanian Food Industry Patronage Federation:

The law encourages you to sell the products before the expiry date. This does not mean promoting or eliminating waste. Moreover, reducing the price so much usually fuels waste. Yet, the problem that bothers me with this law is the creation, be it by ignorance or intentionally, of a parallel market. That is very risky. In a country where we keep complaining about tax evasion, should we go ahead and create a parallel market? It takes a really brilliant mind to do this, doesn't it? (Breniuc, November 2016)

On the matter of trust, a new battlefield is opened, with concepts such as “sell by”, “use by” and “best before” dates as the sore points each party invokes. On the one hand, there is the Romalimenta representative fearing the impact that linking a food poisoning outbreak to a specific food brand might have:

We're caught between a rock and a hard place. If I take the risk of offering for consumption foods that are close to their expiry date or oddly shaped and something happens to those who eat them, I won't get any applause for reducing food waste and helping some people get fed. On the contrary: I'll get a fine! And if there's a case of food poisoning and the press gets a hold of it, they'll immediately find out what shop that food came from, what brand it was, and all hell will break loose with them saying that the salami made by brand x has caused I don't know how many elderly people in a home facility to fall ill. There's no telling where the loss ends here. (Breniuc, November 2016)

On the other hand, there is Simon Suitner's and the Somaro chain's experience with food safety and selling expired food items within a reasonable time without any risks to the health of beneficiaries in Austria. Oana Niculaie, an expert of the Romanian Food Bioresource Institute, pinpoints the problem at the heart of this conflict: “It's not the strictness of the law that is to blame here [...] but the fact that Romanian legislation considers any food item that has exceeded its expiry date as being garbage, therefore indirectly encouraging consumption and waste.” (Breniuc, June 2016).

The anti-food waste legislative saga continues. In June 2018, the Romanian Chamber of Deputies adopted a proposal for amendments to Law 217/2016 which not only made it optional for economic agents to donate food that is about to expire, forbade the re-selling of such merchandise, and completely transferred the logistics burden onto the recipients of possible donations ("Law Project for the amendment of Law 217 of 2016 concerning the reduction of food waste," 2018). The anti-food law is now suspended until January 1st, 2019.

These discussions are relevant for the purposes of this research from two perspectives. On the one hand, the possibility of monetizing food surplus to such an extreme, as set by the law, drastically limits the timeframe within which food that is in danger of becoming a waste matter, but would still be fit for human consumption, can actually be donated. Thus, in cases where the donated food would have to reach and be consumed by its human beneficiaries within less than a week, donations remain only theoretically possible due to the bureaucracy (documents attesting the origin of food items and their fit-for-human-consumption status) and infrastructure impediments (permanent staff and means of transportation that would only sporadically be used). Moreover, given the lack of predictability of the frequency and size of donations, as well as the fact that the non-profit entities that would access these food sources should exclusively bear the connected logistics burden, this system of donations would, actually, be wasting valuable and, most of the times, limited, resources that the NGO sector struggles to secure. On the other hand, the law reflects a food waste reduction strategy which does not seem to lay too heavy a focus on issues of social solidarity or to encourage corporate responsibility actions via monetary incentives, such as tax deductions.

Romania: The Digital Perspective

In the first quarter of 2017, Romania was overturned as European leader in point of internet speed by Sweden, while still ranking among the top ten countries with the highest mobile internet speed worldwide, according to the Q1 2017 State of the Internet / Connectivity Report released by American company Akamai (Akamai, 2017). Despite these impressive figures, Romania still has some important steps to take in enabling its population to take advantage of digital instruments. According to a 2017 World Bank Report on the role of the internet in local development, Romania has one of the "lowest levels of [online] interaction with the government and online submission of completed forms" (WB, 2017, p.23), and a 30 percentage points rural-urban

disparity in Internet access (WB, 2017, p.29). Also, less than 50% of the Romanian population access the Internet daily (WB, 2017, p.35), while less than half of Romanian companies are present online (WB, 2017, p.40). To complete this overview of the digital Romania in figures, a Statista estimate places the proportion of monthly mobile internet users at a little over 50% by 2022 (Statista, 2018).

A few projects explicitly dealing with food waste are present online with their own web pages and social media properties. Waste Food Romania has a dedicated Facebook page with almost 3,300 followers, whereas Mai Mult Verde Association, the main partner in the Waste Food Romania project, and which covers a wide range of ecological issues, reaches 57,000 followers on the same platform. Food Waste Combat, an initiative of the Junior Chambers International in Cluj, Romania, has a Facebook followership of approximately 3,200 people.

Association X (where the author has volunteered and done participant observation) documents on Facebook, before a followership of close to 11,000 people, volunteers' cooking sessions for the benefit of those in need. The association promotes the idea of cooking on a budget, with seasonal and local ingredients, as a form of community support for the homeless and for other categories of people at hunger risk.

A form of online activism specifically dealing with the connection between food waste and food access for those in need was recently initiated by the Resource Centre for Public Participation (CeRe), an NGO aiming to make the public's voice heard to the governing authorities in cooperation with the Somaro social store. In fact, as a reaction to the proposed changes to the anti-food-waste law that were to be voted on by the Romanian Chamber of Deputies, CeRe and Somaro launched on June 21, 2018 an online petition inviting all concerned social actors to sign for last-minute (and very unlikely) improvements that would set economic actors obligation, not option, to donate surplus food that could not be sold on discount and a reversal of the interdiction against social stores re-selling donated food at very low prices (CeRe & Somaro, 2018).

Under a wider ecology umbrella, Green Report, an online news platform specializing in environment and responsible consumption topics, also communicates with a community of close to 9,000 people on Facebook. Association Social Trading Urban Place supports, together with the Lidl retailer, Oily (in Romanian Uleiosul), a project dedicated to the responsible collection of used cooking oil, followed by close to 9,300 people on Facebook. Also, a public group entitled Centre for Responsible Consumption occasionally approaches the topic of food waste before a community of approximately 1,300 people.

ROMANIAN FOOD SAVING MOBILE APPS. THE SELL VERSUS DONATE DILEMMA

As food saving is highly dependent on matters of temporal and spatial proximity to the source of such food as well as on the mobility of its recipients, mobile phone applications appear to be the ideal digital communication tool that would allow users to be at the right place and at the right time for this kind of food transfers to occur.

Four mobile phone apps have been considered for the purposes of this section of the research. App 1¹ is an application in the late development stages, which aims to support restaurants, supermarkets sell the cooked food they have left at the end of the day to willing customers within a specific radius of their location. While App 1 will first be made available to users in Bucharest, App 2, a mobile phone application now sunset and which was designed around a similar mission, was active for a few months in Cluj, the second main Romanian IT hub. The third application considered (App 3) proposes a concept previously tested in Africa, namely saving food by enabling users to get the best deals on fresh produce via notifications about discounted merchandise from large retailers. Finally, there is App 4, an application created by the Association X with the purpose of connecting donors and beneficiaries (legal entities, not individuals) for a smoother transfer of surplus food.

This research combines the perspectives of two startups (App 1 and App 2), one taking its first steps, the other having already ended its activity with that of a corporate franchise (App 3), with an already tested operating mechanism and extensive experience, though within a different cultural environment. Considering the lengthy discussions around the re-selling of donated food that were triggered by the Romanian anti-food-waste legislative process, this set of applications also covers the entire "sell versus donate" spectrum: while the first three play(ed) the food surplus monetization card, App 4 is exclusively interested in donations.

From the point of view of their operating model, the applications the primary purpose of which is monetization offer their users a map or feed-like interface, where they can see, in various degrees of detail, what type of food is being offered, when it would expire, how far away from the user's location it is and how it should be picked up. Some of these applications also offer or are considering offering users a system of personal-

1 All applications and informants have been anonymized out of concern for the influence that this study might have on them from a business perspective (funding for startups, adoption for the more mature projects, etc). Applications will be identified as App 1/2/3/4; owners/developers will be identified as C App 1/2/3/4.

ized notifications, based either on their history of returning to a store/restaurant or on food preferences. Different from other food sales channels, these applications are understood as offering a limited range of items (users cannot order something other than what is posted), within specific time frames (when food is close to its expiry date, but also towards the end of normal business hours), and without the option of having the food delivered. In the case of App 4, beneficiaries do not have an option to express preferences; donors offer whatever they have available, with beneficiaries being notified automatically about any offer placed within their respective geographic area (the same city).

From a commercial point of view, App 1 and App 2 work(ed) on a commission per order model, while App 3 is promoted as a smart mobile advertising tool. App 4 is completely free of charge, with setup and possible developments done on an exclusive volunteering basis.

In developing this portion of the research, the aim was to determine the personal motivations behind the creation of these applications and whether a social solidarity ingredient was present in addition to the apparent ecological drive. Another purpose was to explore whether an ethical dilemma ever arose in the minds of the application creators in the matter of selling versus donating excess food. A collateral topic of interest was the application creators' own experience with their public's awareness and understanding of the acceptability of food sold on discount and of food waste.

On the subject of motivations, a first path explored was whether personal beliefs and/or practices/experiences played a role in the application creators/owners' decision to take on a food waste project. A common element in all testimonies on this subject is that all interlocutors know or have used a similar application in another country and decided to bring it over to Romanian soil as well. They see this as their contribution to Romania's synchronizing with global or European trends in this domain. However, contextual elements revealed each project owner's specific angle in approaching the matter of food waste.

For C App 1, living as a student abroad came with the realization that food waste is a reality very close to home:

Mom would send us packs of food all the way from Romania to Denmark – I think it took almost two days for it to reach us – and [...] we'd throw away that food and feel a sort of ...discomfort. So, we said to ourselves: we've got this thing that is happening to us and we've also got this part where we know we can do something good for the environment. (C App 1)

As a consequence of this and following her exposure to the use of the Too Good To Go mobile application in procuring food on a daily basis in Denmark, she not only embarked, together with her brother, on the journey of building App 1, but also apparently changed her own consumption practices:

Once we realized the magnitude of the problem, that is once we'd done our research [...] yeah, we started [eating food sold at a discount, my note]: the fruit that they sell in the supermarket and it's not that good looking, but it's good to eat, it tastes the same. (C App 1)

In the discussion with C App 2, time surfaced as an important additional theme in his food saving activity:

We [the project team – my note] saw where other people were heading to abroad, and we said to ourselves it's not worth waiting for them to come here as well and that it would be good to have our own product, a Romanian app. (C App 2)

The idea of wasting time sprang up again when he was asked whether he would buy food on discount, therefore qualifying as a potential user of his own application. In fact, he is not a discount hunter because chasing deals takes up a portion of time that he would rather use in a different way.

For C App 3, it was a matter of providing an alternative to the on-and-off solution NGOs were offering to the food saving issue:

The problem with the way an NGO would do things is that it is not sustainable, most of the times, because [the NGO – my note] would need to look for money, sources of financing, after a while, and the costs incurred by retailers are quite high – you've got a logistics cost, you need to donate, you must set up some systems that need to be synchronized ... the IT is always lagging behind- so [said NGO – my note] could not do this efficiently and, retailers would rather throw [food] away instead of covering those logistics costs. (C App 3)

In the case of App 4, the owner of which is also a founding member of Association X, there was, primarily, a communication need that had to be met. With the increase

in awareness about the association's activity - providing cooked meals to those in need – there came the additional task of directing various food donors to potential beneficiaries. Hence, App 4 simply sticks to connecting donors to beneficiaries, with the legal, food safety and logistics details of the food transfer as the exclusive responsibility of the parties that come into contact in this way.

When approaching the subject of “saved” food redistribution to those in need, it became apparent that none of the application creators had initially aimed to tackle this issue as well, and that not seeing food thrown away was their ultimate purpose.

In the case of App 1, there is, currently, no specific option to donate food that cannot be monetized by the end of the day. The founders of the application do not see its existence as “pushing” businesses, in any way, towards selling their food up until the last moment rather than donating it:

We spoke to certain restaurants and they said they donate [excess food – my note] to the Church, [they- my note] donate it to children. [...] We did not try to push it: “Come on, there’s money to be made from it!”. Is that food saved from the bin? Yes! That’s what matters the most to us. If you want to sell the food, we’ll help you; if you want to donate it, we’ll also help with that, but first, let’s monetize it! (C App 1)

With App 2, the creators’ focus on a very quick implementation and their expectations of seeing it being effortlessly integrated in businesses’ daily operations led to a lot of frustration, and caused them to reject the idea of putting in even more work for the accomplishment of this extra charitable purpose:

The distance between expectations and reality was so big that we got fed up and we threw everything away. Somehow, we were offering a tool that was only doing good to everyone involved, but we were the only ones doing the hard work to keep everyone happy. (C App 2)

In addition to this, according to C App 2’ s account of a discussion with a restaurant owner, donations would have come with additional responsibility and costs that were not worth taking on:

Look, guys, to be honest with you, I'm making so much money that I really don't need the change that I would make from selling what I throw away. If you want, come over, and I'll give you all the food; it won't be a donation, we need too many certifications...I'll simply give it to you and you can do whatever you want with it. (C App 2)

Therefore, in the absence of any other incentives to donate, a leaner process whereby excess would be transferred would have made a difference.

In the case of App 4, the strongest arguments against its involvement in the actual donation process is the combination between the legal maze to be navigated and the lack of resources. C App 4 sees food saving and feeding those at hunger risk as two separate issues, which, though theoretically conceivable as two ends of the surplus food redistribution process, cannot be approached as such by the association behind App 4:

Beneficiaries will never be able to say, for instance: 'I need 50 soups!'. The one who initiates [the transfer – my note] is the one who has some food left. This is not a matter of solving a social issue [...], feeding the hungry. This is about combatting food waste. (C App 4)

With App 3, the idea of donating food appears to be clashing, for the moment, with the priority of solving a cost issue:

In the absence of a clear source of financing – usually, with NGOs, financing is focused on projects and missions, it does not work as a continuous process so that you can plan and make your expenses sustainable for several years – someone will have to bear the costs, and, most of the times, that someone is either the State or the retail sector. (C App 3)

In fact, C App 3 sees a cooperation with NGOs – the sharing of maps of available discounted food sources –, as possible, but only after the application has gathered a critical mass of users. For the moment, App 3 is only indirectly involved in CSR actions that would see teams of corporate workers cook on a budget, as a team-building exercise, with the option of donating the resulting meals to homes for the elderly or to other similar institutions.

When touching upon the possible tension between the act of selling and that of donating food that is close to its expiry date, C App 3 acknowledged that this is not a clear-cut choice and, in keeping with his focus on cost, presented the act of buying as somehow more dignified/safer than the one of receiving a food gift:

When it comes to donations, there's the matter of the fuzzy ownership of responsibility in case somebody falls sick because of something that they ate [from a donation – my note]. [...] Who's to bear the costs? There's also a social aspect in that the people who would need the food feel more...well, it's more decent to buy food at a very low price than to have it handed over to you by someone. (C App 3)

Finally, the interviews touched upon perceptions about discounted food and food waste. Whether these accounts are true to fact or they express the application creators/owners' expectations concerning their potential users' profiles depends, to a certain extent, on how long these tools have been in use and on their capacity to collect user feedback.

App 1 currently has 300 potential users, in fact, the application owners' friends and relatives, who have downloaded it for testing purposes. According to C App 1, one category of expected frequent users would be students who, being on a tight budget, would get access to a meal that is otherwise financially inaccessible, and which theoretically has the same nutritional qualities as the fully priced one. She referred to this group as „discount hunters, socially responsible”. She also expects that App 1 users would be corporate workers who do not have time to cook and who pick up food offers on their way home.

With App 2, the owner's experience revealed that selling food on a discount might be perceived as damaging to the food producers' brand image:

[...] at the beginning the whole concept was introduced as 'Help the planet! Save the planet!'. Somehow, [App 2 – my note] was about reducing food waste. [...] Later, very many restaurants came to us and said: 'Look, we cook *à la carte*, we respect ourselves and we're really not ok with you coming with this application [saying – my note] 'This is food on a discount!'. (C App 2)

In fact, C App 2 seems to have presumed the existence of a sort of common sense

rule that what is cooked one day can be eaten (especially when it comes to large portions), but cannot be sold the next day: "It's not food that is about to expire, but food that was cooked today and that I don't want to sell tomorrow, because I don't think it is normal to do so." (C App 2).

App 2 had close to 500 registered users, with under 100 of them regularly placing orders. While 15 restaurants agreed in principle and signed contracts for the use of the application, only 4 of them uploaded offers. According to C App 2, the price of initial offers was not attractive enough for users to try the application out.

App 3 has just been launched, as a pilot in one of the supermarkets in Bucharest. In this case, the usage scenario, according to C App 3, would be that in which you are at home and you are preparing to cook for the family or for some friends and you check out the existing offers so you can get the best deal on your ingredients. As such, there would be two waves of users who come for the discounted produce: in the morning, those who are retired and budget conscious, in the afternoon, the rest. For those who are not on a tight budget, the offers promoted by App 3 would work as hooks to get them on premise, where they most likely would pick up other items as well. C App 3 is also aware of the problematic nature of qualifying food as discounted or about to expire:

There's this stain, a sort of scarlet letter [on the image of discounted food – my note] that I fail to understand. [...] Fresh food, and I'm referring here to fruit and vegetables, doesn't have a specific expiry date...it's just a matter of what it looks like. [...] You really don't know what's really fresh and what's not, anyway.
(C App 3)

That is why App 3 stresses on the fact that it allows users to get the best deals on fresh produce, rather than putting its food saving food forward. On a side note, C App 3 pointed out that finding a good deal might be perceived as a positive skill, likely to boost consumers' self-esteem, much in the spirit of having somehow negotiated that deal themselves.

In the case of App 4, given its limited mission to simply connect donors to beneficiaries no discussion was possible concerning the beneficiaries' possible preferences, needs or perceptions of the quality of the food provided to them.

CONCLUSIONS

This analysis of food-saving mobile phone applications' role in improving food access in Romania and in helping surface systemic issues of social inequality has revealed that, while these tools mediate communication around and the idea of surplus redistribution, they do not aim or have the force to trigger social change yet. That is why they are merely incipient forms of "Internet-enhanced food activism", as defined in the literature review section.

In the case of the mobile applications considered, the precedence that monetization takes over donation within their business model is strongly influenced by a mix of heavy bureaucracy, inexistent infrastructure, non-sustainable financing and missing legal/tax incentives that would have to be overcome by any economic actor wishing to redistribute its surplus for the benefit of those in need. They do ensure a wider access to food for some users who are budget-conscious, while still affording to buy food, but only as a collateral rather than as an intended effect. Discussions with the owners/creators of such apps revealed that they are aware of, but do not take active responsibility in combating hunger as well; in other words, they feel that their apps have reached their purpose at the point where food is no longer thrown away, while its possible redistribution to those in need is above and beyond such purpose.

Further research about digital food activism might be worth undertaking as the Romanian online world becomes a platform where users can contribute and effect social change. One possible relationship to be monitored in this context might be the one tying urban dwellers to specific farms that sell eco or bio produce and poultry via Facebook pages and the evolution of food prices and branding as the respective providers gain notoriety and a constant consumer base.

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