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Retromedia-in-practice: A practice theory approach for rethinking old and new media technologies

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Abstract

The article aims at investigating the persistence and comeback of old media technologies (phenomena we define, in short, 'retromedia') by developing a distinctive theoretical approach named retromedia-in-practice and based on practice theory. Far from being abandoned and forgotten, many old media devices and artefacts (such as vinyl records, cassette tapes, analogue photographic cameras, early videogames and brick mobile phones, to mention just a few notable examples) are nowadays readopted by young generations and niche media subcultures. However, most of the existing literature focusing on these cases has limits and shortfalls, resulting in a partial and misleading understanding of these phenomena: scholars and theorists often put at the centre the cultural fascination for vintage objects and the nostalgia effect; other studies rely on a taken-for-granted distinction between old and new media; the relational and processual nature of media change is rarely addressed; and in general, research lacks a framework capable of adequately integrating symbolic processes with material and technological features. In order to cope with these shortfalls, the article adopts the approach of practice theory, which enables to focus not on the media themselves, but on the practices associated with them. After presenting the distinctive framework of analysis, we exemplify our approach by analysing three different cases coming from music (vinyl records), photography (Polaroid-like instant photography) and videogaming (the 'consolization' of old arcade games). These case studies rely on original empirical data coming from authors' qualitative research. The article concludes by arguing that a shift from considering retromedia as objects or discourses to retromedia-in-practice allows to both address the processual nature of retromedia and propose an interpretation that keeps together media materiality, their meanings and also the embodied activities and behaviours that are attached to them.

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Introduction

As it has been already recognized by different perspectives, far from being abandoned and forgotten, several 'old' media devices and artefacts (such as vinyl records, cassette tapes, analogue photographic cameras, early videogames and brick mobile phones, to mention just a few notable examples) are nowadays undergoing a process of reappropriation by young generations and niche media subcultures. However, most of the existing literature on the resurgence of these 'old' media technologies – what we synthetically define here as *retromedia* – has limits and shortfalls in explaining how and why media technologies from the past are rediscovered and articulated in new ways. For example, commentators of these retro phenomena often put at the centre of their explanations the cultural fascination for vintage objects (e.g. Reynolds, 2011) and the 'nostalgia effect' (e.g. Niemeyer, 2014); several studies rely on a taken-for-granted distinction between old and new media and do not address the relational and processual nature of media change (on this point, see Natale, 2016a); other studies lack a framework capable of adequately integrating symbolic processes (like fashion and distinction processes) with material and technological features (like the specific technical properties of retromedia and the ways in which they embody different courses of actions); and finally, existing studies often fall short of analysing how retromedia are actually used and hence embedded in social practices.

In order to cope with these shortfalls, the article adopts the distinctive theoretical approach of *practice theory* (Schatzki et al., 2001; Shove et al., 2007, 2012). Practice theory is characterized by an emphasis on 'social practices' as the units of analysis, and it hence allows to shift the focus from media themselves to the practices and processes associated with them. Accordingly, we suggest that practice theory allows a theoretical and empirical shift from retromedia as objects or discourses to *retromedia-in-practice*, thus addressing the processual nature of retromedia, in which media materiality, their meanings, as well as the embodied activities connected to them can be understood as a whole and in relation with each other.

By applying this framework, the article aims at describing and putting to work a practice theory approach to understand the presence of retromedia into the present media landscape, defining this distinctive approach with the label of *retromedia-in-practice*. In order to do so, the article begins (see the second section) by exploring the phenomenon of old media technologies; while the topic of retromedia has already attracted scholars from different fields, we address some relevant shortfalls in the existing literature on this topic. Then, in the third section, we present some theoretical implications and major distinctive features of the approach of practice theory; we also discuss the 'circuit of practice' (Magaudda, 2011), a heuristic analytical tool, elaborated on the basis of practice theory, which helps making visible change and evolution in media practices and highlights the interactions between their material, symbolic and performative dimensions.

Then, on the basis of this theoretical framework, we move on to explore three different cases of *retromedia-in-practice*. We start with one of the most recognized and debated ones – the *vinyl* long-playing record (*LP*; see the fourth section), then analyse the case of *Polaroid-like instant photography* (see the fifth section), and finally focus on an emergent case, represented by the *retrogaming* practice of 'consolization' (see the sixth section). These case studies rely on original

empirical data coming from the authors' qualitative research on these topics. Methodologically, the research included qualitative interviews with practitioners and retromedia users, multi-sited ethnographic fieldworks (Marcus, 1995) and document analysis, following the principles of constructivist grounded theory (Charmaz, 2006).

The outcome of these three case studies illustrates how the re-emergence of retromedia is not just a matter of fascination or nostalgia, or something related just with the reconfiguration of retromedia on a mere symbolic level. On the contrary, we argue that the resurgence of retromedia is rather the result of a performative process, resulting from the orchestrated interaction between material technologies, meanings and embodied ways of doing. At a more general level, by presenting the approach of *retromedia-in-practice*, the article aims at offering an integrated tool able to be implemented in the study of the processual and interactive dynamics concerning other cases of re-emergence of what is often deceived as 'old' media from the past.

Retromedia in the digital landscape

Over the last 15 years, we have witnessed a significant reappropriation of media technologies from the past, which has attracted both scholarly and popular interest. To mention just a few notable examples, vinyl records (Bartmanski and Woodward, 2015) and cassette tapes (Demers, 2017; Eley, 2011) have (re)conquered their own space in music practices and record industry; Video Home System (VHS) has become a format-of-choice for the circulation of subcultural cinema (Egan, 2007); Super8 has been re-proposed or kept alive in both amateur and professional cinematography (Theophanidis and Thibault, 2016; Van der Heijden, 2015); and film photography has witnessed a huge resurgence of interest, especially among amateur photographers (Minniti, 2016).

This reappropriation of *analogue* technologies has been sometimes interpreted as a reaction to the digitalization of physical objects and experiences (Sax, 2016). Yet, the resurgence of media from the past has also involved a number of early *digital* technologies. Exemplary are the practices of *retrocomputing* (Lindsay, 2003; Stuckey and Swalwell, 2014) and *retrogaming* (Camper, 2009; Newman, 2012), which articulate themselves through the revived use of old digital artefacts like floppy discs, obsolete computers and arcade video games; or the practices based on the use of 8-bit devices to create digital music, alternatively defined as *chipmusic* or *chiptune* (Polymeropoulou, 2014); or even the reproposal of the original Nokia 3310 mobile phone, newly touted as the 'dumb phone' that provides the very basic functionality of making calls and offers limited access to the Internet (Bogost, 2017).

Within the academia, the re-emergence of what could be generally labelled as *retromedia* (Roy, 2014) or *retrotechnologies* (Sarpong et al., 2016) has had the potential to refashion discourses on novelty, innovation and sociotechnical change, raising issues that relate to media change itself, rather than the life cycles of specific technologies. In media literature, questions concerning how to define the complementary notions of 'oldness' and 'newness', and its implications for how we conceive both change and continuity across media history, have been addressed from several perspectives and discussed in a huge number of publications, whose examination is beyond the scope of this limited contribution (to mention just a few notable examples: Acland, 2007; Coopersmith, 2010; Gitelman 2006; Huhtamo and Parikka, 2011; Kittler, 1999; Marvin, 1988; Peters, 2009; Thorburn and Jenkins, 2003; Zielinski, 2006).

Drawing upon the most recent critical reviews of the literature on the subject (Balbi, 2015; Natale, 2016a; Theophanidis and Thibault, 2016), it is rather worth mentioning some common elements that have emerged through the debate on the persistence of the 'old'. These points

represent significant theoretical advances in our understanding of the ways in which past media forms remain active in contemporary ones and provide us with useful insights to set up a working hypothesis for use in undertaking our analysis.

First of all, the debate on the 'oldness' of media has led to abandoning a series of dichotomies, such as analogue versus digital and old versus new, as well as the binary distinction between analogue/old versus digital/new, which had problematically characterized certain descriptions of media and technological change (Balbi, 2015: 245; Natale, 2016a: 590; Theophanidis and Thibault, 2016: 17). Binary and strict definitions based on the biographical age and technological features of media have been increasingly supplanted by the idea that 'oldness' and 'newness' should not be considered as two separate stages in media lives, but two relational terms that are (repeatedly) attributed to media as part of a continuous process of reconfiguration of situated practices and discourses. This allows us to take into account the coexistence and interplay, within and across media, of the 'analog' and the 'digital', and the 'old' and the 'new', thus moving forward into the analysis of the process of mutual co-construction, or simultaneous (re)invention of new and old media, which has been differently addressed by notions such as those of *remediation* (Bolter and Grusin, 1999) and *intermediality* (Balbi, 2015; Balbi and Magaudda, 2018).

Besides disrupting the idea of an assumed media 'purity', this reconception has also shifted scholarly attention to two interrelated features of media change: the symbolic work that takes place during the process of domestication (Silverstone and Haddon, 1996), in particular through the construction of popular and personal narratives through which the impact of technological change on our societies and everyday lives is represented and negotiated (Lesage, 2013; Natale, 2016b); and the processual and continuously transformative nature of change, to which both persistence and discontinuity can be ascribed (Gitelman, 2006; Gitelman and Pingree, 2003).

With regard to the issue of narratives, literature suggests that we should in fact think about 'newness' and 'oldness' as phenomena originating from the recursive narrative patterns that artificially separate media into 'old' and 'new' types, often representing 'the former [as] silently or epically succumbing as soon as the latter emerges' (Theophanidis and Thibault, 2016: 17; see also Pickering, 2015, for a critical discussion of the 'present-centredness' of media studies). Simone Natale (2016a) proposes a return to the emphasis on the level of discourse that had characterized Carolyn Marvin's seminal book *When Old Technologies Were New* (1988), and to extend 'the key conceptual question of new media – for whom and when are which media new' (Peters, 2009: 19) to old media, 'examining the possibility that the oldness of media might be sought not in the media themselves, but rather in our perception and imagination of technological change' (Natale, 2016a: 586). From this respect, the renewed attention paid to the role of change-related narratives in the shaping of media identities reflects an increasing interest in analysing the boundary work through which the 'old' and the 'new' are co-produced and distinguished at the same time.

Lastly, within the recent literature on the 'oldness' of media, it is possible to identify a common trajectory toward the development of epistemologies that reject historical linearity. As a matter of fact, emerging research approaches like *media archaeology* (Huhtamo and Parikka, 2011), and notions like those of *media hysteresis* (Theophanidis and Thibault, 2016) and *media residuality* (Acland, 2007), all address the need to reject linearity in order to study those recursions in media history which empirically blur the boundaries between 'old' and 'new' media. Combined with the aforementioned arguments, the adoption of non-linear models has allowed scholars to shed new light on the processual and continuously transformative nature of media change. In this respect, it has been argued that change 'always involves more than one media and more than one temporality' (Theophanidis and Thibault, 2016: 13), and that 'each medium may have a few basic ideas . . . that

take many forms in material technologies' over time (Peters, 2009: 22). Non-linear perspectives thus enable interpreting the moments when media are in flux, be they moments of invention – such as when the material means and conceptual modes of 'new' media have not yet become fixed (Gitelman and Pingree, 2003) – or moments of reinvention – like when 'old' media are renewed and transformed by repeatedly achieving common sense intelligibility, through processes that have been differently addressed by concepts like those of *media renewability* (Peters, 2009) or the *double birth* of media (Gaudreault and Marion, 2005).

Practice theory and *retromedia-in-practice*

In order to cope with gaps and shortfalls in the understanding of retromedia, we propose a distinctive theoretical perspective we define as *retromedia-in-practice*, based on the framework of practice theory. Practice theory is an emerging approach in the social sciences, developed to address the processual dynamics of everyday practices, with a specific focus on how people's activities are intrinsically embedded in a set of material objects and technical artefacts (Shove et al., 2007, 2012).

The theoretical roots of theory of practice bring back to the emphasis on praxis over mental space characteristic of the philosophies of Wittgenstein and Heidegger, as they have been reinterpreted by Theodore Schatzki (Schatzki, 1996; Schatzki et al., 2001). At the same time, in the social sciences, the efforts of scholars such as Pierre Bourdieu (1977) and Antony Giddens (1984) have put emphasis on the need to find a new balance between structural constraints and individualistic agency to understand social behaviour: Bourdieu by elaborating the concept of *habitus* and popularizing the notion of *practice* as a strategic one; Giddens by putting emphasis on the recursive interaction between structure and agency by the means of his *structuration theory*.

At the beginning of the noughties, this stream of philosophical and social theory has been articulated in a new form by cultural sociologist Andreas Reckwitz, who proposed an operative definition of *practice* more suited for empirical research. In this view, practice is not the opposite of abstract and theoretical activities, but a distinctive 'configuration', consisting 'of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, "things" and their use, a background knowledge in the forms of understanding, know how, states of emotion and motivational knowledge' (Reckwitz, 2002: 249).

On the basis of this definition, a more specific application of practice theory has been elaborated by a group of scholars led by sociologist Elizabeth Shove (Shove et al., 2007, 2012). Shove and colleagues define social practices as the dynamic outcomes of the interactions and linkages between three distinctive dimensions: *materials*, including things, technologies, tangible physical entities; *competences*, encompassing skills and know-how implied in the practice; and *meanings*, which include symbolic meanings and ideas (see Shove et al., 2012: 14). Thus, studying social reality from a practice theory perspective means first and foremost to focus on the way materials, competences and meanings emerge as stable and socially shared configurations, as it has been done in recent years by analysing a variety of notable cases: from sport (Shove and Pantzar, 2005) to consumption (Warde, 2005) and from photography (Hand, 2012) to music (Magaudda, 2011). This literature also intersects with the call for a new paradigm in media research aimed at incorporating the 'practice turn' elaborated in social theory (Braüchler and Postill, 2010; Couldry, 2012).

The implications of a practice theory perspective for the study of media technologies – and retromedia in particular – are manifold. First of all, this approach is characterized by an emphasis

on practices as the main units of analysis. Consequently, it avoids placing a single dimension at the centre of the analysis, as it happens for instance when just the technical features of retromedia or their cultural understandings are considered (as in the cases of the approaches focused on the category of 'nostalgia'); practice theory rather embraces different and interlaced layers (material, symbolic and competence-related), providing us with a richer and non-reductionist understanding of the life of retromedia. This point has been also raised in relation to digital media by media sociologist Nick Couldry (2012), who outlined how, in a fast-changing media environment, the theory of practice is able to offer a more nuanced understanding of the shifting relationship between digital media, people's activities and social needs.

One fundamental advantage of the theory of practice in analysing retromedia is its emphasis on the processual and performative nature of the status of these objects: This means that retromedia are not considered as taken-for-granted objects, even when these 'old' media do not apparently change in their physical or technical features as part of their rearticulation in the present. This also resonates with the approach outlined by social anthropologist Arjun Appadurai (1986), who explained how the social lives of things are the outcomes of a constructive work based on attaching and detaching symbolic meanings to and from these objects. However, what practice theory adds to this view is that symbolic processes never occur alone; they have always consequences for the other elements of practice, namely the material and technical features of retromedia as well as the competences involved in their circulation and use.

Furthermore, theory of practice brings to the foreground the processes of change and the performative nature of retromedia. When the processual and dynamic nature of practices come to the foreground, hence the most striking power of this perspective emerges: the ability to explain how a specific practice emerges, how it is embedded in a social context, how it changes over time and even how it can enter a dead-end street and disappear. As we will see, looking at *retromedia-in-practice* especially helps understand in a deeper way the dynamics of change that characterize the re-emergence of technologies from the past. This is also linked to the fact that practices need to be constantly performed and enacted by practitioners, who are indeed addressed as 'carriers of practices' (Shove et al., 2012: 22). In this respect, conceptualizing retromedia as *retromedia-in-practice* also enables to recognize the crucial role of communities and users in their evolution over time.

One point of departure of our analysis based on the idea of *retromedia-in-practice* is the study of the transition from analogue to digital technologies in music consumption by Magaudda (2011, 2012). Here, the author elaborates the 'circuit of practice', a heuristic tool based on practice theory able to make easier the understanding of the process of dematerialization of music as the outcome of the dynamic interaction between materials, competences and meanings. Looking through the circuit of practice at the emergence of the iPod as a pivotal device during the first wave of the digitalization of music in the mid-2000s, the author was able to outline the crucial interaction between meanings, objects and competences, which characterized the adoption of digital music among teenagers. The circuit of practice has been discussed in several research areas, including consumer studies (Arsel and Bean, 2012; Pantzar and Ruckenstein, 2015), marketing (Moraes et al., 2017), innovation studies (Sarpong et al., 2015) and media consumption (Feiereisen et al., 2019), recognizing that this heuristic tool is able to offer an effective way to reveal the heterogeneity of practices and how changes occur in their social lives.

The adoption of the practice theory-based circuit of practice will enable us to shift from the understanding of retromedia as *objects* to a more theoretically nuanced and sensitive vision of retromedia as *practices*, or *retromedia-in-practice*. This allows us both to address the processual

nature of retromedia and to propose an interpretation that keeps together media materiality, their meanings and also the embodied activities and behaviours that are attached to them. In other words, by applying the theory of practice to retromedia, we aim at providing empirical and analytical evidence that retromedia can be better understood as constantly ongoing (re)configurations of heterogeneous elements interconnected with one another. Yet, on the other hand, the use of this tool enriches the existing literature and debate by proposing an interpretation that keeps together the different dimensions of retromedia. By doing so, it recognizes the importance of the symbolic dimension but, instead of interpreting retromedia as moments of rhetorical invention with no or limited relation with artefacts, technologies and social uses (see Natale, 2016a), it rather focuses on the situated ways in which meanings and discourses come to stay together with materialities and activities during the process of change which characterizes the social lives of media. Therefore, our approach intends to support the viewpoint that we should shift from considering retromedia as objects, but at the same time, it proposes to reconnect the symbolic work through which retromedia emerge with the other dimensions involved in the process of their emergence.

Vinyl records in the 'circuit of practice'

Vinyl records have been among the earliest retromedia whose resurgence has been recognized both in public discourse and academic research. In the late 1980s/early 1990s, vinyl records seemed to have disappeared in shops as well as in musical consumption practices, remaining alive only among a core niche of audiophiles and music collectors (Milano, 2003; Plasketes, 2004). However, in mid-2000s, this almost abandoned medium begun to experience a renewed circulation among new generations of music listeners, as it was outlined for example by Haynes (2006), whose pioneering research on the vinyl resurgence showed that it concerned not only listeners' nostalgic attitude, but also embodied the expression of a resistant attitude towards contemporary mainstream industry and music practices. According to the Recording Industry Association of America (RIAA) industry statistics , in the new century, vinyl records' sales revenue increased from 27 million dollars in 2000 to 388 in 2017, a time span during which the overall revenue from music content decreased from 14.3 billion to 8.7 billion, thus highlighting how this old and almost disappeared medium has experienced a renewed life.

Bartmanski and Woodward (2015) have shown, with a research focused on electronic music artists, producers and recording studios, that this evident resurgence of the vinyl is 'far from endorsing any kind of myopic cultural reactionism' (p. 28) or 'knee-jerk conservatorism', as it rather is 'about rediscovery of engagement, sensuality, coolness, care, ritual rarity and specific auditory experience' (p. 168). These authors also argued that the vinyl resurrection was based on the creation of new experiences strictly interrelated with the materiality and performativity of practice and not just on the symbolic fascination of vintage artefacts.

As already mentioned in the previous section, one of the earliest applications of practice theory, and more specifically of the circuit of practice, has been with regard to the vinyl (Magaudda, 2011), focusing on the performative reconfiguration of listeners' practices in the age of digital media distribution. Moreover, in the analysis of the vinyl resurgence, the circuit of practice has been also discussed by Sarpong et al. (2016), who draws on circuit of practice's processual approach, together with actor-network theory, to propose a conceptual model of the rediffusion of retrotechnologies, claiming that 'the re-diffusion process is a long and complicated one, in which allies are recruited, interests are aligned, roles are designated and networks are sustained' (Sarpong et al., 2016: 25).

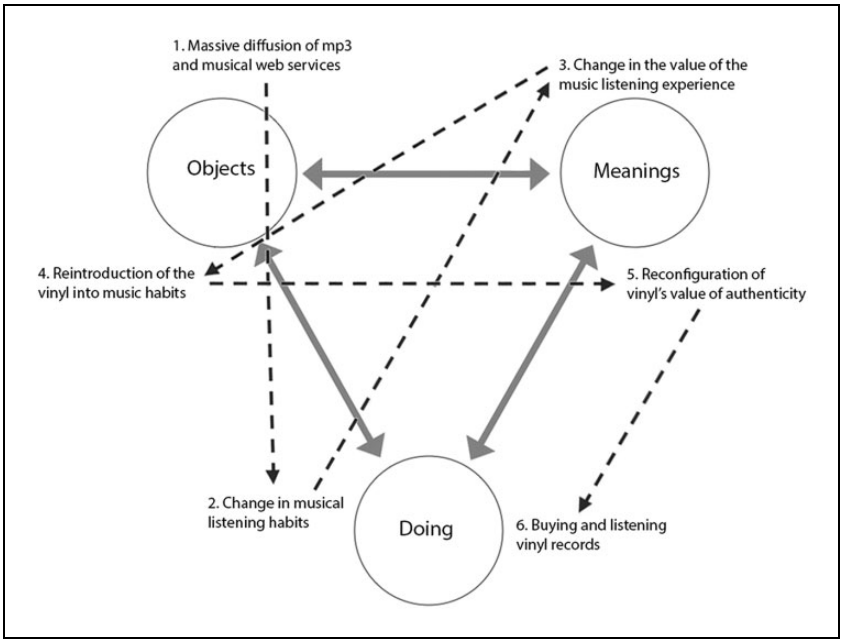

Figure 1. The application of the 'circuit of practice' to the vinyl resurgence (from Magaudda, 2011: 30).

Departing directly from the original practice theory framework, based on the idea that social practices' heterogeneity can be simplified into three basic elements interweaved with each other, the circuit of practice enables us to visualize the performative interconnections between materiality, meanings and embodied ways of doing. For this reason, the circuit improves the understanding of the performative nature of the changes occurring in social practices, facilitating the understanding of the interrelationships between objects, meanings and ways of doing. Moreover, the circuit puts emphasis not only on the symbolic reconfiguration of the meanings associated to objects, but also on the role of materiality, highlighting not just the changes in the meanings and narratives surrounding the vinyl resurgence, but also the power of 'a wider reconfiguration of existing materialities, which can acquire a renewed role in expressing meanings as well as in serving as mediators for partially different activities and ways of doing' (Magaudda, 2011: 29).

The original analysis of the vinyl resurgence based on the circuit of practice drew on the experience of Fabio, a 27-year-old listener who, in the mid-2000s, began buying and listening to music on vinyl, recounting reasons and feelings that encouraged him to switch to this retromedia.

The circuit focused on the appropriation of vinyl records (Figure 1) and showed how the spread of digital formats had consequences on listeners' habits and how these changes generated a variation in the perceived loss of authenticity connected with digital formats. Consequently, these feelings produced a change in the material artefacts used by Fabio, pushing him towards the adoption of the vinyl record and turntable. Finally, the reintegration of vinyl records as common objects in musical practice pushed towards the development of new activities and behaviours, which involved buying, listening and appreciating vinyl records.

It is important to note that this description addresses the vinyl resurgence not just as a consequence of a change in the cultural and symbolic understanding of the medium, but also as the

outcome of a wider performative shift in the whole set of material activities and forms of doing in musical consumption. Again, we see how the circuit of practice helps to highlight how changes in the material life of musical consumption have been part of a wider performative integration, where objects, feelings, personal experiences, cultural values and activities have interacted in a process of mutual co-shaping.

Departing from this early version of the circuit related to the vinyl resurgence, we can now analyse a more specific feature of the vinyl comeback, stressing one more time how the changes surrounding the use of vinyl records in the present involved also the materiality and physicality of the object. Hence, we focus on the emergence of a new informal standard within the vinyl resurgence, the so-called '180-gram' version of the LP. This label refers to the physical weight of the LP and points to the fact that an increasingly popular 'premium' version of the vinyl record is pressed with extra vinyl, resulting in a thicker disc, one more robust and durable and therefore perceived as more qualitative and even exclusive (Bartmanski and Woodward, 2015: 124–126).

In the age when vinyl was a mainstream sonic medium, in the 1970s and 1980s, standard pressings of LPs were generally based on discs weighing between 100 g and 120 g. Thicker and heavier discs started spreading only in the early 1990s, initially targeting niche markets of audiophiles, in which specialist music labels, very focused on reissues and collectors' editions, started to press LPs in more expensive versions than the regular editions for the mainstream market. However, in the last decade, the return of vinyl LPs in shops and the increasing number of reissues of old albums for a rising audience have been accompanied by the adoption of these heavier versions of the LP, sold with stickers putting the label '180-gram' well visible on the front cover. As has been summarized by one of the many blogs devoted to the passion for vinyl music,

> as part of the vinyl market resurgence that has been going on since 2005 (and growing steady), most labels felt the need to make the vinyl record more attractive for consumers, as if they were justifying the vinyl release (or reissue) with the heavyweight grade and that Quality Standard perception. (Vinyl Gourmet, 2015)

While the cost of printing a regular vinyl is between $1.25 and $1.50, the price for a 180-gram version is almost double, but the increased weight is evidently perceived as adding value in terms of quality. However, what the heavier materiality gives to the vinyl LP is not primarily related with an improved sound quality, as the groves on vinyl (by which the quality of sound comes from) are the same in both regular and heavier LPs. What changes is essentially the tactility of the LP, whose major weight makes vinyl more satisfying to handle and to place on the turntable. At the same time, the extra weight is also supposed to limit the possibility of warping or bending discs (although 180-gram vinyl discs have been also criticized because it seems that, when accidentally warped – due, e.g. to incorrect storing – they are more complicated to bring back to a regular shape). In any case, the point here is that the resurgence of vinyl records coincided, from a material point of view, not with the recreation of the very original form of the LP, but rather with a material reconfiguration of it, driven by the need to disseminate an object connected with a slightly different set of meanings as well as with the emergence of a refocused role for the tactile relationship with the object. At the same time, we cannot explain the emergence of the 180-gram vinyl in terms of political economy, just as a strategy to sell more records, as in this latter case, we would miss the interaction between marketing strategies and listeners' embodied practices and cultural reframing of this old medium. Adopting the circuit of practice (Figure 2), we can visualize the process that led to the emergence of this reconfigured 180-gram LP as a new material standard for the vinyl revival as follows.

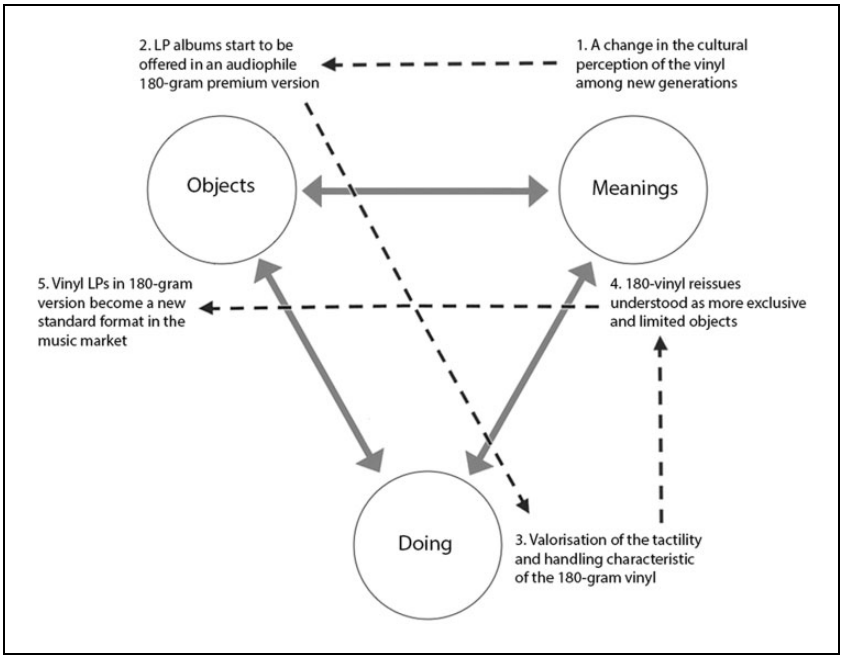

Figure 2. The emergence of the 180-gram standard in the age of vinyl resurgence.

The circuit starts from the rise of a new cultural perception related to the vinyl LP, generated by music subcultures and niche markets (as described, e.g. in the work of Bartmanski and Woodward, 2015) (step 1); this shift produced the diffusion of LP reissues, which have often been pressed with audiophile quality to appeal up-market consumers tantalized by a apparently 'premium' goods (step 2); these premium, heavier reissues helped to trigger the sense of a deeper tactile satisfaction in handling vinyl LPs (step 3) and, more evidently, they contributed to the symbolic construction of vinyl reissues as more exclusive, limited objects, able also to differentiate themselves from old copies available in the second-hand market (step 4); finally, this process produced a more stable change in the format of vinyl LPs available in shops, where this '180-gram' version turned into a new standard, not only for reissues of old albums, but also for the release of new content (step 5).

As we can see from this application of the circuit of practice, we are able not only to grasp the different levels (material, symbolic and performative) that cooperated for the emergence of a new standard for the LP format; but, on the top of this, we can also bring to the foreground how what is usually addressed as an 'old' medium is indeed an original and distinctive outcome of a process of reconfiguration of music listening practices.

Polaroid 2.0 in the 'circuit of practice'

Our second example of *retromedia-in-practice* regards the resurgence of Polaroid-like analogue instant photography. Founded in 1937 by Edwin H Land, Polaroid is an American company best known for its invention of 'instant' photography, a kind of photography based on the use of self-developing films that allow photographers to produce chemically developed prints shortly after taking the picture. By eliminating all steps between the exposure of photosensitive supports and the

viewing of finished prints, Polaroid's technology reduced photography to its 'degree zero', anticipating one of the most salient features of the digital image, that is, the speed of its production and potential transmission (Buse, 2007). It was not by chance that newspaper writers adapted the famous Kodak slogan ('you press the button, we do the rest') to greet the invention of Polaroid technology, with which, they declared, 'you press the button and the camera does the rest' (Buse, 2008: 229).

Due to the diffusion of digital photography, between 2001 and 2009, Polaroid declared bankruptcy twice and was sold three times, discontinuing the production of instant cameras and films in 2008 (Bonanos, 2012: 7). Yet, rather than disappearing, Polaroid technology has survived in use thanks to an increasing number of amateurs of both old and new generations. Amateurs devoted to Polaroid photography undertook collective actions to ensure instant photography's survival, which in 2008 led to the creation of a new company called *The Impossible Project* (TIP). TIP acquired and adapted the former Polaroid production plant in Enschede, the Netherlands, and since 2010 it has been producing new instant films for vintage Polaroid cameras as well as some new instant cameras. In a few years, TIP evolved from a small project run by 10 former Polaroid employees and a couple of investors to a company with around 130 employees. As reported by the company itself, in 2016, its products were present in 2000 outlets worldwide, 35,000 vintage cameras a year were refurbished and the production of its new films was expected to reach 1,000,000 units (Agrifoglio et al., 2016). In May 2017, TIP eventually acquired the brand and intellectual property of the Polaroid corporation and was renamed *Polaroid Originals*. TIP's success in fostering the reappropriation of Polaroid technology reflects a more general trend towards the readoption of analogue photography in the digital landscape, which has recently caught the attention of both the academia (Gómez Cruz and Sanin, 2017) and big media outlets (Laurent, 2017).

In a previous study, based on the ethnography of three Italian communities of practitioners, it has been shown how, as the perceived obsolescence of instant photography reached its acme, a new meaning attributed to the use of Polaroid cameras emerged, which was guided by a logic of opposition to digital photography (Minniti, 2016). This oppositional reworking of the meaning of analogue instant photography was part of a reconfiguration of Polaroid practice in the digital age, which eventually led to the production of a new practice involving both old and new elements, which could be labelled as 'Polaroid 2.0' (Buse, 2016: 214–221).

This process begun in 2008, when the discontinuation of instant products was announced. As a consequence, a number of photographers, who appreciated Polaroid technology for the intrinsically physical character of the produced images, which were readily touchable, exchangeable and manipulable 'photo-objects' (Buse, 2010), turned into activists in defence of the preservation of instant photography. They created websites such as *savepolaroid.com* and *savethepolaroid.com* and subscribed petitions in order to either coax Polaroid into reversing its decision or find a buyer for Polaroid's machinery (Bonanos, 2012: 164–165).

Empirical data show that their defence of instant photography was based on a series of related arguments, upon which an opposition to digital photography was construed. First, since digital photography was perceived as immaterial, Polaroid's intrinsic objectness acquired more saliency, being seen as a way to bring materiality back into photography. For instance, an amateur described this material essence as something that digital photography has 'stolen' from the practice:

> [Photography] was a 'digital' work, in the sense that you accomplished it with your fingers, with your hands. They have stolen this definition, too. That is, the 'digital' shifted from being something done with fingers to something done with pixels. (Camillo, male, 42 years old)

Accordingly, practitioners share the idea that photography should be practiced 'with hands:' 'Above all I love manipulation . . . I like touching the film . . . I love the fact that you do things with your hands'. (Alba, female, 43 years old)

Second, the Polaroid process was perceived as adding a degree of unpredictability and visual imperfection that are absent in the digital realm. Jamie Bayliss, the creator of *savethepolaroid.com*, was one of the first to sum up the difference between instant and digital photography in these terms:

> Polaroid represents what I love about art and photography. I believe experimentation, accidents, and unpredictability are important if not essential parts of the art making process. With Polaroid film you are guaranteed all three will occur at some point . . . It's not that you cannot be experimental with digital photography: it's just a lot more difficult. It's difficult to make a mistake. Either that, or when you do experiment your results are predictable. (Quoted in Minniti, 2016: 28)

By publicly discussing these issues through the Internet, this initial group of practitioners elaborated a discourse on the authenticity of the 'analog experience' guaranteed by Polaroid, which was grounded on its opposition to digital photography. As described in the same study, this symbolic work has been followed by the establishment of new roles and activities, as soon as practitioners turned into marketers, distributors and repairers, ensuring the circulation of Polaroid cameras and films. At the beginning of its enterprise, TIP allied with these networks by two means: it gave substance to the 'impossible project' of saving instant photography by deploying the resources needed to develop new films compatible with existing Polaroid cameras, and it recruited several activists as testers during the experimental stage of film production, also sharing their results via its website to attract future customers (Minniti, 2016).

Later on, in 2010, when TIP started selling the first batches of its new films, photographers realized that these were defective and unstable and produced unpredictable visual imperfections. Yet, rather than leading to a refusal of the new films, this created a hype and attracted new practitioners. Indeed, by distributing new defective films compatible with old Polaroid cameras, TIP built on the symbolic work already accomplished by Polaroid enthusiasts, reinforcing the opposition between the unpredictability and imperfection of Polaroid, and the perceived predictability and perfection of digital photography. Building on the new meaning attributed to instant photography in the digital age, TIP emphasized the unpredictability of the 'analog adventure' and adopted the innovative marketing strategy of selling defective batches of films as limited editions designed for the bravest experimenters (Bonanos, 2012: 168). Since then, communities devoted to analogue instant photography have proliferated, and new techniques have been developed to explore the physical dimension of photography.

This reconstruction focused on the events occurred between 2008 and 2010, when the process of obsolescence of instant photography was reversed by an initial niche of enthusiasts and the entry of a new producer. To contextualize this process, it should be added that the reconfiguration of Polaroid was paralled, in the same years, by the spreading of other analogue practices based on similar elements, such as *lomography* – a popular practice based on the use of analogue 'toy' cameras which produce unpredictable visual effects (Albers and Nowak, 1999), as well as digitally remediated forms of analogue aesthetics that also focused on visual imperfection (Bartholeyns, 2014). Yet, Polaroid 2.0, as a practice, has kept evolving in the following years, involving an increasing number of photographers of both old and new generations, and new artefacts such as novel instant cameras and improved films that provide more predictable and definite results.

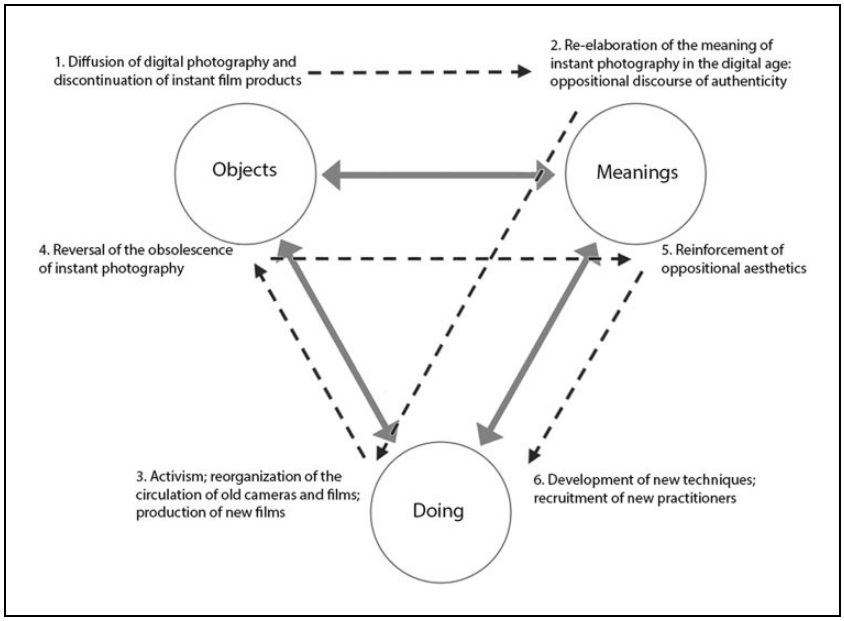

Figure 3. The emergence of Polaroid 2.0 visualized through the 'circuit of practice'.

By visualizing the initial yet fundamental stage of Polaroid's reconfiguration through the circuit of practice, it is possible to put emphasis on the interconnections between meanings, materialities and ways of doing, established during the process through which Polaroid was revived as part of a (temporarily) stable configuration of heterogeneous elements (Reckwitz, 2002). The circuit (Figure 3) starts from the spread of digital photographic technologies and the discontinuation of production of instant cameras and films (step 1); these have an effect on small groups of Polaroid users, who redefine the meaning of instant photography by elaborating a discourse of authenticity, within which the analogue and the digital are opposed on the basis of their different physical and processual qualities (step 2); new roles and activities are established as soon as the photographers turn into activists, creating websites, subscribing petitions and ensuring the circulation of old cameras and films, and TIP develops new films compatible with the existing Polaroid cameras (step 3); the combined actions of the activists and TIP reverse the process of obsolescence of instant photography, which survives thanks to the circulation of both old and new artefacts (step 4); the spread of TIP's new films reinforces the oppositional aesthetics elaborated by the users (step 5); and finally, new techniques are developed which focus on the physicality and unpredictability of analogue instant photography, and new practitioners are recruited (step 6). At this stage, the practice of Polaroid 2.0 can be recognized as a single, (temporarily) stable entity.

The analysis of Polaroid 2.0 from the perspective of the theory of practice thus sheds light on three notable features of the process through which obsolescent technologies become newly meaningful and active. First, it is during this process that the 'old' and the 'new' co-constitute each other; in this as well as similar cases (e.g. Lindsay, 2003), the former acquires a new meaning in opposition to the latter (Minniti, 2016). Second, this process articulates itself through the continuous interaction between material, symbolic and performative elements (Shove et al., 2007). Third, it is during this process that 'allies are recruited, interests are aligned, roles are designated

and networks are sustained', allowing the establishment of retromedia practices (Sarpong et al., 2016: 25).

Retrogaming and 'consolization' in the 'circuit of practice'

Consolization refers to the process of modifying an arcade videogame board for use on a home television set. The resulting unit, known as a 'consolized' system, is a sort of artisanal console built by upcycling original arcade videogame hardware. Consolization is part of the wider world of *retrogaming*, which includes various practices of playing and collecting original videogames of the 1970s, 1980s and 1990s, 'to reclaim videogaming from the mainstream' through forms of 'hardcore fan resistance' (Newman, 2004: 53). Although it is not possible to provide a reliable estimate of the extent of the retrogaming phenomenon, since it is mainly based on the circulation of the second-hand artefacts and illegal software, it is worth noting how, since 2017 also prominent industry actors like Nintendo and Sega have started targeting retrogamers by offering products based on classic games, such as the Super Nintendo Entertainment System Classic Edition and the Sega Forever app. Within the wider world of retrogaming, which seems to have reached a momentum in the these very last years (Scott, 2017), consolization represents a niche trend: in Italy, where the present research was conducted, the practice involves around a dozen producers of 'consolized' systems, who mainly sell their products to local gamers interested in reviving the arcade experience.

In the field of retrogaming, the arcade experience is mostly recreated through the use of software applications that run arcade game code, such as the Multiple Arcade Machine Emulators (MAME), originally developed by the Italian programmer Nicola Salmoria in 1997. The MAME is thus an emulation software, which works 'by tricking the game code in believing that it is running on the original arcade cabinet', acting like 'zombie code running without knowledge of its platforms death' (Murphy, 2013: 44–45). Differently, to recreate the arcade experience, consolization requires the physical transformation of the original arcade board into a new home console, which runs the original game code. From this point of view, consolization can be situated in a long tradition of videogame hacking practices and cultures, which sometimes involve the physical modification of the hardware (Consalvo, 2007; Scacchi, 2010).

Although consolization can be virtually performed on any kind of arcade board, the practice actually focuses on one specific technology, the Neo-Geo Multi Video System (MVS). Released in 1990 by Japanese game company SNK, the Neo-Geo MVS was an arcade unit with an interchangeable cartridge board that enabled multiple games to be loaded onto a single cabinet. By allowing the arcade operators to put up to six different game titles into a single cabinet, and giving users the option to choose from multiple games, the MVS technology changed the industry paradigm, which had been previously dominated by arcade machines that were custom built for individual games. Instead of using custom per-game hardware, Neo-Geo games were thus sold as individual cartridges that could be loaded onto an MVS's interchangeable cartridge board (Nicholl, 2015).

Throughout the 1990s, the MVS technology offered by SNK has become very popular for its association with 'beat-'em-up' and other forms of fighting games, exemplified by titles like King of Fighters, Fatal Fury and Samurai Shodown, which competed in this area with the famous Street Fighter series from Capcom. Nonetheless, SNK's success started to decline in the mid-1990s due to a series of commercial failures and the transformation of videogame industry, and the company went out of business in 2001 (Provo, 2004). Nowadays, the MVS technology survives in a renewed

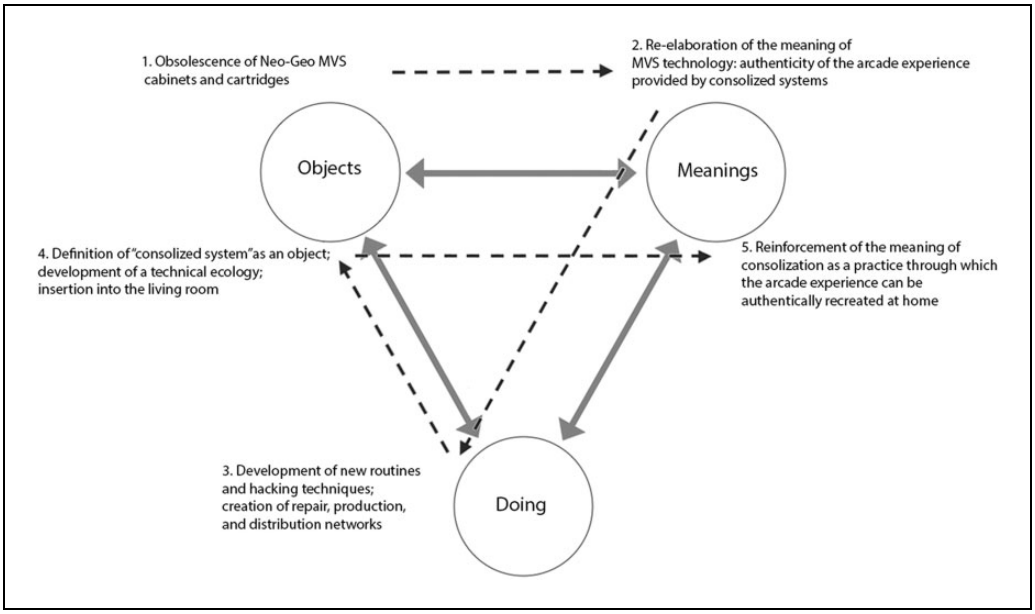

Figure 4. The emergence of consolization visualized through the 'circuit of practice'.

form thanks to a niche of retrogamers and hackers who 'consolize' it in order to migrate the arcade experience from the past to the present and from its original context to the home.

Applying the circuit of practice to the analysis of how consolization has emerged as a retromedia practice (Figure 4), we could start from the material dimension, where at the beginning we find the original Neo-Geo arcade cabinets reduced to a residual condition, due to the extinction of the practices of arcade videogaming emerged during the 1990s. As relics of the videogames' past, they meet the retrogaming subculture, where they become meaningful again to a niche of gamers (step 1).

Facilitated by the physical availability of MVS boards and cartridges that are extremely cheap, having lost the value they had in their original social context (a process labelled by social anthropologist Kopytoff (1986) as *decommoditization*), these retrogamers, who lived the original Neo-Geo experience in their youth, rework the meaning of MVS, which becomes a technology through which the arcade experience can be brought home in a way perceived as more 'authentic' than the one provided by emulation software (step 2). This is due to the fact that, since consolized systems are based on original hardware and software, the 'porting' of arcade games, that is, their migration to a different and new platform, can be accomplished without losses, reaching an 'arcade perfect' status that is highly desired by retrogamers. As expressed by an interviewee, 'if the machine is the original one, and the games are also original, there can't be any relevant loss . . . hence, in this sense, it is the same machine, and this lets you bring the arcade experience home' (Renato, male, 37 years old).

Then, new routines are developed as part of the practice (step 3). Small groups of enthusiasts emerge, within which MVS boards and cartridges start circulating again. Technical discussions on how consolization is accomplished start spreading through online forums and dedicated Facebook groups. This way, the 'doings' associated with consolization are defined and evolve. According to

the interviewees, consolization becomes characterized by elements consistent with hacker culture and ethics (Himanen, 2001): a focus on the pleasure deriving from overcoming the technical challenges posed by the transformation of arcade boards into domestic consoles; and the personal satisfaction which comes from the continuous improvement of hacking techniques and the resulting consolized boards, which have to appear 'as if they were industrially-produced consoles' (Renato, male, 37 years old). Practitioners turn into repairers, producers and distributors and start selling consolized systems to a wider public of retrogamers.

Consolized systems acquire specific features, and other objects are integrated into the practice (step 4). The systems are customized, yet they have to be comparable to industrial consoles. They need to be 'an experience . . . something you love and something that is well done . . . it should be a beautiful object you could put in the living room, as you do with your Playstation 4' (Luigi, male, 43 years old). They become part of an ecology which includes also objects taken from different contexts, such as the CRT professional monitors that were once used by broadcast professionals, and are now popular among retrogamers, since they provide what is considered the best analogue visual experience.

The meaning of consolization as a retromedia practice is reinforced and enriched by the interconnection of the heterogeneous elements described earlier, and consolization can be now considered as a single, (temporarily) stable entity, whose reproduction is ensured by the recruitment of new practitioners, as well as by the circulation of consolized systems and original MVS cartridges among gamers (step 5). Consolization is increasingly recognized as the most authentic way to recreate the arcade experience. Neo-Geo videogames reacquire value in contrast to the contemporary ones, due to a design that was characterized by the immediacy of gameplay and the constant challenges posed to gamers (according to Noel Bushnell, founder of Atari, arcade games were designed to be 'easy to learn, impossible to master'; cited in Murphy, 2013: 45). These are two aspects of the original arcade experience that retrogamers feel have been lost.

Conclusion: From retromedia as media objects to *retromedia-in-practice*

In this article, we have presented an approach to study the resurgence in the present of retromedia. The proposed approach, which we have labelled as *retromedia-in-practice*, is based on the theory of practice (Shove et al., 2007, 2012) and is characterized by the understanding of retromedia not as just material technologies or devices, nor in terms of the changing meanings that are attached to them; rather, retromedia are understood as outcomes of performative processes, in which media materialities, their meanings and the embodied ways of doing related to them are considered as a whole, in their interactive relationships. In order to exemplify the performative processes through which retromedia emerge and evolve, we adopted the circuit of practice, an heuristic tool developed within the framework of practice theory (Magaudda, 2011), enabling to visualize in a clear and intuitive way how the resurgence of retromedia is, above all, a process of reconfiguration of the elements that constitute media practices.

In order to present and test our *retromedia-in-practice* approach, we offered three distinctive examples, coming from different notable cases of retromedia. We started from the case of the vinyl LP, which is not only one of the most debated and discussed retromedia, but also the one around which the circuit of practice has been originally formulated. Then, we presented another relevant case coming from the analogue world, that of polaroid-like instant photography. Finally, we discussed a third case that comes instead from the digital world, that of the 'consolization' of

arcade games. In all three cases, what has emerged is that retromedia are not just the result of a nostalgic appreciation of attractive and fashion-related media from the past, nor the consequence of the efforts put in place to keep alive old technologies with a museological or historiographical approach. Rather, when observed from the perspective of a *retromedia-in-practice* approach, these media, only apparently belonging to the past, emerge as innovative outcomes of a creative reconfiguration of actual practices, whose constitutive elements, including both meanings and the physical and technical shape of the concerned media, have evolved and act today in renewed and transfigured forms.

What we have proposed through these three analyses is therefore a theoretical and empirical shift from *retromedia* understood as just objects or discourses to *retromedia-in-practice*, with the main aim of offering an integrated and intuitive approach to highlight the processual nature of retromedia: a process in which media materiality, their symbols and meanings, as well as the embodied activities connected to them are considered and understood together as a whole. By doing so, we aimed at providing empirical and analytical evidence that retromedia can be better understood as constantly ongoing configurations and reconfigurations of heterogeneous elements interconnected with one another. On the one hand, this understanding builds on previous knowledge concerning the main features of retromedia, as they have been identified by the recent literature on the subject: the processual and relational nature of retromedia, as well as their nonlinear and multiple temporality (Balbi, 2015; Natale, 2016a; Theophanidis and Thibault, 2016).

In this respect, our three analyses showed how the 'oldness' of retromedia emerges from the interplay, within and across media, of the 'analog' and the 'digital', and the 'old' and the 'new', through the interconnection of elements from different temporalities. Therefore, through our analysis, we intended to support the viewpoint that a shift from considering retromedia as objects is needed; but, at the same time, we proposed to reconnect retromedia symbolic work with other dimensions, material and embodied, involved in the process of their emergence. Hence, our analyses also showed how this relational process does not occur only on a symbolical and discursive ground, with no or limited relation with artefacts, but it rather involves the situated ways in which meanings and discourses come to be linked together with materialities and activities during the continuous change characterizing the social lives of media.

We can also outline that a limit of the proposed approach is that it represents the application of the theory of practice elaborated by Shove and her colleagues (Shove et al., 2007, 2012) and does not take into account some recent advancements in debates about practice-based research. In this respect, we suggest future research might enrich such an approach by explicitly including in it further dimensions, including the role of affects and emotional components in shaping the evolution of (retro)media practices, as it has been outlined by Gherardi (2017), who addressed the place of affects in practice theories and the contribution that the so-called 'affect turn' may offer to practice-based studies. This and others theoretical refinements might provide researchers with a more comprehensive interpretive model, able to take into account not only the performative interconnections between materialities, meanings and ways of doing, but also the relationship between these elements and other dimensions possibly relevant in retromedia practices. When it comes to retromedia, such an integration might renew and enrich, for example, our understanding of the widely debated relationship between media and nostalgia.

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References

Acland CR (ed) (2007) *Residual Media*. Minneapolis: University of Minnesota Press.

Agrifoglio R, Schiavone F, and Metallo C (2016) Investigating the sailing ship effect as newcomers' strategic reaction to technological change. In: Torre T, Braccini AM, and Spinelli R (eds) *Empowering Organizations. Enabling Platforms and Artefacts*. Cham: Springer, pp. 39–49.

Albers P and Nowak M (1999) Lomography: Snapshot photography in the age of digital simulation. *History of Photography* 23(1): 101–104.

Appadurai A (ed) (1986) *The Social Life of Things: Commodities in Cultural Perspective*. Cambridge: Cambridge University Press.

Arsel Z and Bean J (2012) Taste regimes and market-mediated practice. *Journal of Consumer Research* 39(5): 899–917.

Balbi G (2015) Old and new media. Theorizing their relationships in media historiography. In: Kinnebrock S, Schwarzenegger C, and Birkner T (eds) *Theorien des Medienwandels*. Köln: Herbert von Halem Verlag, pp. 231–249.

Balbi G and Magaudda P (2018) *A History of Digital Media: An Intermedial and Global Perspective*. London: Routledge.

Bartholeyns G (2014) The instant past: Nostalgia and digital retro photography. In: Niemeyer K (ed) *Media and Nostalgia: Yearning for the Past, Present and Future*. Basingstoke: Palgrave Macmillan, pp. 51–69.

Bartmanski D and Woodward I (2015) *Vinyl: The Analogue Record in the Digital Age*. London: Bloomsbury.

Bogost I (2017) The wisdom of Nokia's dumbphone. *The Atlantic*, 28 February. Available at: https://www.theatlantic.com/technology/archive/2017/02/the-wisdom-of-the-dumbphone/518055/ (accessed 9 September 2018).

Bolter JD and Grusin RA (1999) *Remediation: Understanding New Media*. Cambridge: MIT Press.

Bonanos C (2012) *Instant. The Story of Polaroid*. New York: Princeton Architectural Press.

Bourdieu P (1977) *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.

Braüchler B and Postill J (eds) (2010) *Theorising Media and Practice*. Oxford and New York: Berghahn.

Buse P (2007) Photography degree zero: Cultural history of the polaroid image. *New Formations* 62: 29–44.

Buse P (2008) Surely fades away. Polaroid photography and the contradictions of cultural value. *Photographies* 1(2): 221–238.

Buse P (2010) The polaroid image as photo-object. *Journal of Visual Culture* 9(2): 189–207.

Buse P (2016) *The Camera Does the Rest: How Polaroid Changed Photography*. Chicago: University of Chicago Press.

Camper B (2009) Retro reflexivity: *La-Mulana*, an 8-bit period piece. In: Perron B and Wolf MJP (eds), *The Video Game Theory Reader 2*. New York–Abingdon: Routledge, pp. 169–195.

Charmaz K (2006) *Constructing Grounded Theory. A Practical Guide Through Qualitative Analysis*. London: SAGE.

Consalvo M (2007) *Cheating: Gaining Advantage in Video Games*. Cambridge: MIT Press.

Coopersmith J (2010) Old technologies never die, they just don't get updated. *International Journal for the History of Engineering and Technology* 80(2): 166–182.

Couldry N (2012) *Media, Society, World: Social Theory and Digital Media Practice*. Cambridge: Polity Press.

Demers J (2017) Cassette tape revival as creative anachronism. *Twentieth-Century Music* 14(1): 109–117.

Egan K (2007) *Trash or Treasure? Censorship and the Changing Meanings of Video Nasties*. Manchester: Manchester University Press.

Eley C (2011) Technostalgia and the resurgence of cassette culture. In: Fisher JP and Flota B (eds) *The Politics of Post-9/11 Music: Sound, Trauma, and the Music Industry in the Time of Terror*. Farnham: Ashgate, pp. 43–54.

Feiereisen S, Rasolofoarison D, De Valck K, et al. (2019) Understanding emerging adults' consumption of TV series in the digital age: A practice-theory-based approach. *Journal of Business Research* 95: 253–265.

Gaudreault A and Marion P (2005) A medium is always born twice. *Early Popular Visual Culture* 3(1): 3–15.

Gherardi S (2017) Which is the place of affect within practice-based studies? *M@n@gement* 20(2): 208–220.

Giddens A (1984) *The Construction of Society*. Cambridge: Polity Press.

Gitelman L (2006) *Always Already New: Media, History and the Data of Culture*. Cambridge: MIT Press.

Gitelman L and Pingree GB (eds) (2003) *New Media: 1740–1915*. Cambridge: MIT Press.

Gómez Cruz E and Sanin J (2017) *Analogue Renaissance: Remediation of the Photographic Field*. Paper presented at the *ANZCA Conference*, Sydney. Available at: https://www.academia.edu/33797584/Analogue_renaissance_Remediation_of_the_photographic_field_1 (accessed 5 January 2019).

Hand M (2012) *Ubiquitous Photography*. Cambridge: Polity Press.

Haynes D (2006) 'Take those old records off the shelf': Youth and music consumption in the postmodern age. *Popular Music and Society* 29(1): 51–68.

Himanen P (2001) *The Hacker Ethic and the Spirit of the Information Age*. New York: Random House.

Huhtamo E and Parikka J (eds) (2011) *Media Archaeology: Approaches, Applications, and Implications*. Berkeley: University of California Press.

Kittler F (1999) *Gramophone, Film, Typewriter*. Stanford: Stanford University Press.

Kopytoff I (1986) The cultural biography of things: Commoditization as process. In: Appadurai A (ed) *The Social Life of Things: Commodities in Cultural Perspective*. Cambridge: Cambridge University Press, pp. 64–91.

Laurent O (2017) This is why film photography is making a comeback. In Time.com. Available at: http://time.com/4649188/film-photography-industry-comeback/l (accessed 8 January 2019).

Lesage F (2013) Cultural biographies and excavations of media: Context and process. *Journal of Broadcasting and Electronic Media* 57(1): 81–96.

Lindsay C (2003) From the shadows: Users as designers, producers, marketers, distributors, and technical support. In: Oudshoorn N and Pinch T (eds) *How Users Matter: The Co-construction of Users and Technology*. Cambridge: MIT Press, pp. 29–50.

Magaudda P (2011) When materiality 'bites back': Digital music consumption practices in the age of dematerialization. *Journal of Consumer Culture* 11(1): 15–36.

Magaudda P (2012) What happens to materiality in digital virtual consumption? In: Molesworth M and Knott JD (eds) *Digital Virtual Consumption*. London: Routledge, pp. 111–128.

Marcus G (1995) Ethnography in/of the world system: The emergence of multi-sited ethnography. *Annual Review of Anthropology* 24(1): 95–117.

Marvin C (1988) *When Old Technologies Were New: Thinking About Electric Media in the Late Nineteenth Century*. Oxford: Oxford University Press.

Milano B (2003) *Vinyl Junkies: Adventures in Record Collecting*. New York: St. Martin's Griffin.

Minniti S (2016) Polaroid 2.0. photo-objects and analogue instant photography in the digital age. *Tecnoscienza: Italian Journal of Science and Technology Studies* 7(1): 17–44.

Moraes C, Carrigan M, Bosangit C, et al. (2017) Understanding ethical luxury consumption through practice theories: A study of fine jewellery purchases. *Journal of Business Ethics* 145(3): 525–543.

Murphy D (2013) Hacking public memory: Understanding the multiple arcade machine emulator. *Games and Culture* 8(1): 43–53.

Natale S (2016a) There are no old media. *Journal of Communication* 66(4): 585–603.

Natale S (2016b) Unveiling the biographies of media: On the role of narratives, anecdotes and storytelling in the construction of new media's histories. *Communication Theory* 26(4): 431–449.

Newman J (2004) *Videogames*. London and New York: Routledge.

Newman J (2012) *Best Before: Videogames, Supersession and Obsolescence*. Abingdon: Routledge.

Nicholl B (2015) Bridging the gap: The Neo Geo, the media imaginary, and the domestication of arcade games. *Games and Culture* 12(2): 200–221.

Niemeyer K (2014) *Media and Nostalgia: Yearning for the Past, Present and Future*. Dordrecht: Springer.

Pantzar M and Ruckenstein M (2015) The heart of everyday analytics: Emotional, material and practical extensions in self-tracking market. *Consumption Markets and Culture* 18(1): 92–109.

Peters B (2009) And lead us not into thinking the new is new: A bibliographic case for new media history. *New Media and Society* 11(1-2): 13–30.

Pickering M (2015) The devaluation of history in media studies. In: Conboy M and Steel J (eds) *The Routledge Companion to British Media History*. London and New York: Routledge, pp. 9–18.

Plasketes G (2004) Romancing the record: The vinyl de-evolution and subcultural evolution. *Journal of Popular Culture* 26(1): 109–122.

Polymeropoulou M (2014) Chipmusic, fakebit and the discourse of authenticity in the chipscene. *WiderScreen* 1–2. Available at: http://widerscreen.fi/numerot/2014-1-2/chipmusic-fakebit-discourse-authenticity-chipscene/ (accessed 2 September 2018).

Provo F (2004) The history of SNK. Available at: https://www.gamespot.com/articles/the-history-of-snk/1100-6089278/ (accessed 6 October 2018).

Reckwitz A (2002) Toward a theory of social practices: A development in culturalist theorizing. *European Journal of Social Theory* 5(2): 243–263.

Reynolds S (2011) *Retromania: Pop Culture's Addiction to Its Own Past*. London: Macmillan.

Roy EA (2014) All the memory in the world, all the music in the world: Mediating musical patrimony in the digital age. *Networking Knowledge: Journal of the MeCCSA Postgraduate Network* 7(2): 20–33.

Sarpong D, AbdRazak A, Alexander E, et al. (2015) Organizing practices of university, industry and government that facilitate (or impede) the transition to a hybrid triple helix model of innovation. *Technological Forecasting and Social Change* 123: 142–152.

Sarpong D, Dong S, and Appiah G (2016) 'Vinyl never say die': The re-incarnation, adoption and diffusion of retro-technologies. *Technological Forecasting and Social Change* 103: 109–118.

Sax D (2016) *The Revenge of the Analog: Real Things and Why They Matter*. New York: Public Affairs.

Scacchi W (2010) Computer game mods, modders, modding, and the mod scene. *First Monday* 15(5). Available at: https://uncommonculture.org/ojs/index.php/fm/article/view/2965/2526 (accessed 8 October 2018).

Schatzki T (1996) *Social Practices: A Wittgensteinian Approach to Human Activity and the Social*. Cambridge: Cambridge University Press.

Schatzki T, Knorr Cetina K, and Von Savigny E (eds) (2001) *The Practice Turn in Contemporary Theory*. London: Routledge.

Scott J (2017) Retro gaming: Why players are returning to the classics. In: *BBC.com*. Available at: https://www.bbc.com/news/uk-40427838 (accessed 11 January 2018).

Shove E and Pantzar M (2005) Consumers, producers and practices. Understanding the invention and reinvention of nordic walking. *Journal of Consumer Culture* 5(1): 43–64.

Shove E, Pantzar M, and Watson M (2012) *The Dynamics of Social Practice: Everyday Life and How it Changes*. London: SAGE.

Shove E, Watson M, Hand M, et al. (2007) *The Design of Everyday Life*. Oxford: Berg.
Silverstone R and Haddon L (1996) Design and the domestication of information and communication technologies: Technical change and everyday life. In: Mansell R and Silverstone R (eds) *Communication by Design: The Politics of Information and Communication Technologies*. Oxford: Oxford University Press, pp. 44–74.
Stuckey H and Swalwell M (2014) Retro-computing community sites and the museum. In: Angelides MC and Agius H (eds) *Handbook of Digital Games*. Hoboken: John Wiley & Sons, pp. 523–547.
Theophanidis P and Thibault G (2016) Media hysteresis: Persistence through change. *Alphaville: Journal of Film and Screen Media* 12: 8–23.
Thorburn D and Jenkins H (2003) *Rethinking Media Change: The Aesthetics of Transition*. Cambridge: MIT Press.
Van der Heijden T (2015) Technostalgia of the present: From technologies of memory to a memory of technologies. *NECSUS* 4(2): 103–121.
Vinyl Gourmet (2015) 180 Gram Vinyl . . . What are the benefits? Heavyweight vinyl records explained. In: *Vinylgourmet.com*. Available at: https://blog.vinylgourmet.com/2015/10/180-gram-vinyl-what-are-the-benefits-heavyweight-vinyl-records-explained.html (accessed 20 September 2018).
Warde A (2005) Consumption and theories of practice. *Journal of Consumer Culture* 5(2): 131–153.
Zielinski S (2006) *Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means*. Cambridge: MIT Press.

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