Convergence by means of globalized remediation

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Abstract
Prophecies of media convergence have been a key component of recent discussions of digitalization. It has been claimed that the manipulability of digital data facilitates convergence and allows an erosion of differences between media. This article questions these assumptions by showing how there are also considerable obstacles against such manipulability, as well as against the erasure of differences between media. By examining empirical developments, as well as arguments put forward by theorists like Friedrich Kittler, Jay Bolter, Lev Manovich and Rosalind Krauss, it is maintained that what we are seeing is more a proliferations of media than a convergence leading to their unification. In part, this is due to our affection for a multiplicity of media. However, one way in which media do become similar is by increasingly being remediated on a digital platform. Thereby they become subject to a globalization effect by having their functionalities augmented by basic traits of the computer.

‘[w]hat used to be cinema’s defining characteristics have become just the default options, with many others available.’

(Lev Manovich, The Language of New Media, 2001: 293)

In the introduction to Grammaphone, Film, Typewriter, the German media theorist Friedrich Kittler stipulates a convergence, which will erase previous differences among media. He writes:

Once movies and music, phone calls and texts reach households via optical fiber cables, the formerly distinct media of television, radio, telephone and mail converge, standardized by transmission frequencies and bit information […]. The general digitalization of channels and information erases the differences among individual media.

(Kittler [1986] 1999: 1)

The gist of Kittler’s prediction of twenty years ago still seems valid in important ways. Reports on media convergence have become a daily feature in the news. We hear about Yahoo expanding their services towards television and mobile phones, about Motorola making a wireless phone featuring a customized Google search service, about Apple’s new iPhone, which is a combination of mobile phone, video iPod, and Internet device, and so on. Media as well as media companies migrate ever more
1. The quality of mobile telephone cameras is steadily increasing, especially in terms of storage and resolution. Lenses will in most cases not be allocated much space, however, and this is likely to remain the most important limitation of phone cameras. In general, producers will seek to increase the quality until it reaches a certain level of customer satisfaction. In terms of photographs, a new low-fidelity aesthetic partly promoted by the limited quality of the early mobile-phone photograph has lowered the demands on photographs. This might be seen as part of a bigger picture in which a low-fidelity aesthetic of mobility has gained prominence, for example, in television spearheaded by reality shows.

2. The concept of remediation was introduced by Bolter and Grusin and they have kept its definition rather open. They describe remediation as ‘the representation of one medium in another’, and argue that ‘remediation is a defining characteristic of the new digital media’ (Bolter and Grusin 1999: 45). This allows remediation to be about the borrowing of formal traits, as well as the recirculation of stories and characters as in adaptations where material from seamlessly into neighbouring areas, and telephone companies do the same.

One of the more salient illustrations of convergence is actually offered by the mobile phone. Through the years, a number of gadgets have been offered as metamedium machines carrying a wide set of media functions, but nothing has been as successful as the mobile telephone. Besides a telephone service, this universal media machine now often offers television clips, music, radio, e-mail, web browsing, and computer games. It takes photographs, records video, and handles the new media SMS and MMS, just as it may offer additional non-media features like an alarm clock, calendar, notebook, calculator, and even penlight. The scope is impressive considering its small size, but many of its functions offer a quality that is rather limited, much like the scissors on a Swiss Army knife. Regarding its photographic and web-browsing capabilities, for example, it remains more of a toy than a serious media machine. Thus, on a number of such levels, we need more specialized devices. Still, the mobile telephone compensates for its low-fidelity quality in a number of areas by means of versatility and portability.¹

The remediation of these media to our mobile telephones makes picking up our photographic camera to shoot still images or our video camera to shoot moving images, much the same thing.² When these devices are remediated to our phones as the same physical object, choosing between them now becomes a matter of selecting between two settings on the camera menu of the telephone. If differences among media are merely becoming a matter of alternative settings in the same software running on universal media machines, are the differences between individual media then disappearing? Kittler does not only claim an erasure of the differences among individual media. In continuation of the quote above, he also projects the erasure of the very concept of medium:

Inside the computers themselves everything becomes a number: quantity without image, sound, or voice. And once optical fiber networks turn formerly distinct data flows into a standardized series of digital numbers, any medium can be translated into any other. With numbers, everything goes. Modulation, transformation, synchronization; delay, storage, transportation; scrambling, scanning, mapping – a total media link on a digital base will erase the very concept of medium.

(Kittler [1986] 1999: 1–2)

In the following, my question will be: to what extent and in which ways could these predictions be said to describe the situation now emerging? To what extent is a convergence of media taking place and what form does it take? Do formerly distinct media converge so that the differences among them in fact disappear, and does this imply an erasure of the concept of medium? There has in fact been talk of a ‘post-medium condition’ and a ‘post-media aesthetics’. These notions have respectively been brought up by the art historian Rosalind Krauss (1999a, 1999b), and by the media theorist Lev Manovich (2001b). What do such notions entail, and what bearing do they have on the convergences addressed here and on the future of the concept of medium?
Before addressing Krauss and Manovich’s notions, I will first confront the widespread perception that with digitalization, ‘everything goes’, in terms of data manipulation, and second, I will look at how media interact, in terms of competition, symbiosis, and remediation. On this background, I move on to address the concept of medium itself, before concluding with a reassessment of the shape that convergence actually seems to take today.

With digitalization – ‘everything goes’

The judgement that digitalization brings unlimited freedom, where ‘everything goes’, as Kittler claimed in the 1980s, is still surprisingly common, in spite of, among others, Manovich’s demonstrations (2001a: 138) of how laborious, ‘time-consuming and difficult’ digital compositing, for example, may be. Such a notion of freedom is, for example, still Mark B.N. Hansen’s bid on the question of what difference the digital makes, in his book New Philosophy for New Media (2004). His answer is that ‘digitalization allows for an almost limitless potential to modify the image, that is, any image’ (Hansen 2004: 31). The qualifier ‘almost’ could indicate some moderation to this claim. But after Hansen takes Manovich to task for ‘correlating new media with earlier media types’, like the cinema and, to see new media as strongly influenced by earlier media, Hansen goes on to characterize new media by their ‘total material fluidity’, because ‘rather than being anchored to a specific material support, new media are fully manipulable, digital data’ (Hansen 2004: 31). Thus, it appears that Hansen grounds his ‘new philosophy for new media’ on an empirically dubious and hyped conception of such media.

In order to correct our perception of what digitalization has brought, it is time to reassess and clarify the view of new media as ‘fully manipulable’, and focus not only on the manipulability of digital data, but also on the various limitations to which such a manipulability is subject. The efforts and achievements of the companies producing digital effects for cinema give a good indication of how difficult digital data is to mould and shape. Rendering hair, water, storms, lava from volcanoes, not to mention altering and controlling expressions on the human face, still represent daunting and costly challenges for highly specialized digital-effects companies. Each achievement tends to elicit explicit celebrations: inside the production environment (in journals like American Cinematographer and Cinefex), within professional organizations like SIGGRAPH (devoted to the development of computer graphics), as well as in public (when marketing new movies featuring spectacular effects). Thus, talk of digital media as ‘fully manipulable’ belies the fact that any meaningful alteration of a photographic image in some way comes up against the challenge of drawing. An exploration of to what extent the rich set of effects and tools developed for controlling the alteration of photographs can aid us in overcoming this challenge is worthy of a study in its own right.

A second limitation to the manipulability of digital media files is related to the fact that institutional players in the field work to limit our freedom to modify and edit the material we can access via our computers. In order to get a clearer picture of this, it might be useful to consider key aspects where the computer differs from earlier media.

one medium is used in another. The concept, according to Bolter and Grusin, also ‘express[es] the way in which one medium is seen by our culture as reforming or improving upon another’ (Bolter and Grusin 1999: 59).

This way of defining the concept also allows any digitalization of a medium to be a remediation of the previous version of the medium. In the following I will draw upon these meanings freely, without attempts to delimit its meaning beyond what the flow of the argument will effect.

3. In fact, this means that creativity in the new prolific area between live-action cinema and animation to a great extent takes place by way of software development. This also has a bearing on the ways in which aesthetic ideas and visions are spread today. New code might be written for a special project, like The Matrix (1999) or Lord of the Rings (2001), only to reappear as a set of features in editing software, which secures viral spread of an aesthetic effect across visual culture, though often in diluted versions. The dynamics of this field, in which programmers seek to make digital data manipulable in aesthetically productive ways, is worthy of a study in its own right.
4. Such technologies partly dilute the idea of a unique original, rendering the 'original' just one among many. But no matter how many there are, they are still considered originals. Thus, the distinction between original and copy is another matter. It is not based upon mass production, but upon reproduction of an original by what is somehow regarded as inferior means. The copy may, for example, not be created from the original cast at the time of the others, not be signed by the artist, or it may derive from an alternative technology, like a photographic reproduction of an oil painting, for example (see Benjamin 1973).

Medium of display and medium of storage

The computer ensures a radical separation between what we might call the medium of display and the medium of storage, initiated by the advent of mechanical mass production. A traditional medium like painting knew no separation between the two. Velasquez's painting Las Meninas (1656) is both displayed and stored by the singular painting hanging in the Museo del Prado in Madrid. Sculpture is a somewhat more complicated case: sculptures carved in stone, such as Michelangelo's Statue of David (1504), combine the storage and display function in the original sculpture, like the painting, in this case to be inspected in the Accademia Gallery in Florence.

With the development of mass-production technologies related to items like bronze sculptures, printed books, graphical prints, a separation between the storage and display mediums develops, to the extent that casts and presses are stored. In the case of photography, the Daguerreotype and the later Polaroid photograph still combine storage and display functions much as in a painting. But with the positive/negative technique made public by Fox Talbot in 1839, a separation occurred, such that the negative became the privileged medium of storage for photography, while the positive print took care of the display function (albeit the use of positive prints in a storage function – in family albums and elsewhere – should not be underestimated). In the case of sound, the gramophone record provides another transitory case. It provides storage in a way that leaves the sound on display in some form, since the sound can be inspected directly on the record for levels of intensity. This option disappears with the magnetic tape, where the medium of storage can still be held in our hand and inspected for possible damage, but where the information stored has moved beyond the range of human perception. The computer radicalizes this, especially when we have dispensed with floppy disks and the like, and increasingly use our hard disks for storage. Then we end up first of all seeing the stored works in terms of icons and file names.

The development sketched above, I believe, has been vital in inspiring current talk of dematerialization. However, what the examples above clearly indicate is that any general notion of dematerialization is missing the point. What is dematerialized in a certain way is our media of storage, in the sense that they are no longer physical objects we can hold in our hands as much as they are data codes kept in computer files.

This dematerialization and standardization allows data to be stored in a computer and enables smoother operations of translation between formats, as well as further possibilities for editing and manipulation. When a computational device also becomes connected to other devices through interconnected networks, file transfer becomes easy, and allows an instant materialization of various data on a number of connected display units across the globe, notably screens and speakers. This allows for an increased use of the computer as a general media player, which in turn provokes producers to secure a separation between the two features discussed above, that of the display function and what we in terms of the computer might call the storage and manipulation function, because what we can store in a computer we also, for the most part, can edit.
Copyright and the wall between editing and display

In the development of the computer towards a metamedium – with an increased ability to remediate other media and show us films, television programmes, newspapers, and journals – the storage and manipulation capabilities of the computer are often left unengaged or explicitly locked out. We are often left with the option of displaying media content that we cannot change: to play movies or television programmes, to display newspaper or journal articles, and so on. Sometimes we can store media files on our computer; at other times we can neither download, nor store them. Very often, even if we can store them, editing is cumbersome and difficult, much more so than the technological possibilities of the computer itself would suggest, and certainly more than notions of ‘total manipulability’ indicate. However, a number of software agents offer keys to unlock this wall, at least partly, thus allowing us to copy and share audio-visual and other files. The competence of users also varies rather dramatically in terms of how skilled they are in finding the right software or in hacking their way beyond the limitations of this wall.

A feud is ongoing in this field between copyright holders and encryption experts on the one side, and users, software agents, and hackers on the other. The film and music industries, especially, are trying to ensure that their material is not distributed for free re-edited and used in ways that they do not approve of. However, they are at the same time increasingly eager to stimulate user activity in a number of ways, in order to profit from the user-driven productivity sometimes talked about under the rubric Web 2.0. The strengthening of such an interest represents a major trend in the current entertainment industry. This trend produces a certain slack in terms of how forcefully copyright holders seek to prevent attempts to play with and manipulate their material. Audience activity takes place under the watchful eye of a producer who is both happy to see people supply their labour for free while adding value to his product – but is also nervous, since his lack of control means he cannot dictate exactly how the product will turn out, or where all the revenue might end up. A major challenge for media producers is to accommodate, absorb, and utilize this creative vogue empowered by the digital democratization of the means of production. Arvidsson and Sandvik discuss this challenge related to computer games in the present volume. Henry Jenkins (2003, 2006) has discussed it in terms of audience participation in popular culture. Relating to this, there is also a trend in the art world where generating and reworking social relations are at issue, as discussed by Nicolas Bourriaud (2002) under the term ‘relational aesthetics’. In short, ours is not only a time of convergence, but also of increased democratization of cultural production. In fact, the two are linked, in that the technological convergence makes it easier to mix, edit, and play with various files, in spite of the limitations I have pointed to above. But let us now take a closer look at what convergence entails, what shape it seems to take, and how far it appears to go.

Convergence – competition and symbiosis

Bolter and Grusin (1999: 47–48) note how ‘television and the World Wide Web are engaged in an unacknowledged competition in which each now seeks to remediate the other. The competition is economic as well as
5. John Caldwell points to high ambitions in the case of the early cross-platform work for the television series *Homicide* (NBC), but notes that this level of ambition has become rare (Caldwell 2003: 129). There is a tendency to use the Internet to send viewers to television and vice versa. Internet sites also allow the audience to engage with the story worlds in multiple ways, through games, discussion groups, and additions to the fictional world (like plot expansions and character background stories not used in the dramatic production). They might also allow producers to tap fan cultures for ideas and useful material. There have also been attempts to make the media equal in importance in the unfolding of a story, for example in the use of radio and the Internet (see Neumark 2006).

6. Jenkins (2001: 1) argues that, 'Part of the confusion about media convergence stems from the fact that when people talk about it, they’re actually describing at least five processes.' I second Jenkins’s call for distinctions between levels when addressing convergence, and three of his five levels coincide with the distinctions I have opted for. In Jenkins’s view, the convergence can be (1) technological, (2) economic, (3) social aesthetic; it is a struggle to determine whether broadcast television or the Internet will dominate the American and world markets. Much like the earlier struggle between television and film, the relationship between television and the World Wide Web is not only one of struggle, but also one of tactical cooperation and symbiosis.

An illustration of this can be found in television’s rapid expansion to integrate mobile telephones and web pages into their programmes. This expansion gives us, not television per se, but a multimedia circuit of television/mobile/Web, which demonstrated its revenue-generating potential with *Big Brother*. This is a set-up that has been adopted in numerous programmes since, in later reality-based programmes like *Pop Stars* as well as in a host of other shows, enticing the audience to engage in SMS voting, thereby creating substantial extra revenue. Fictional programming has become multimedia too, through offering websites that draw the audience into web-based chats, games, podcasts and ancillary products of various kinds. In most cases this leaves a main medium like radio, film, or television in the leading position, being supported and expanded by new points of access and supplementary products.5

But the tendency is not only one of symbiosis between distinct media. It is also one in which a series of remediations allow established media like newspapers, photography, radio, film, and television to free themselves partly from the media technologies in which they were developed and migrate across any channel open to them. The technological convergence facilitates these media’s reappearance on the screens of our computers, our mobile telephones, our PDAs (personal digital assistants), our iPods or wherever they can be displayed. Texts, sounds, and images become detached from the media technologies that used to support them, and perhaps even gave birth to them (like in the case of photographic emulsion and the celluloid film strip), and migrate and multiply on technological platforms flattened by digital technology. At the same time, texts as well as media seem to excel in exercises of remediation, in which they mirror and cite each other and simulate each other’s characteristic features, as Bolter and Grusin note in terms of television adopting aspects associated with web pages and the reverse. What seems to appear is a double move in which the technological convergence supports a tendency toward remediation and recirculation which also entails elements of aesthetic convergence, but at the same time, medium specificity also seems to be maintained through the recirculation of specific medial characteristics. This prolific activity of remediation raises obstacles for any theory of convergence, leading to the end of media, a post-medium situation in which all media converge into one super medium capable of performing the functionality of every previous medium, or at least, capable of satisfying much of our urge for mediation.

Now, to get a handle on the complexity and the conflicting tendencies characterizing convergence, it is useful to distinguish between the various levels on which it takes place.6 First, digitalization itself, of course, renders media texts into data files that, to a substantial degree, are easily combined and circulated. This is the technical convergence that forms an important basis for other kinds of convergence. But to which extent does this situation entail convergence on other levels as well – on the level of cultural forms;
on the level of aesthetics; on the level of the physical devices that deliver our media; and on the level of industrial actors?

Clearly, industrial actors are merging on a grand scale, AOL and Time Warner, Sony and Ericsson, Google and YouTube, to mention just a few, or they are making exclusive or semi-exclusive partnerships, like Apple with Google, Cingular, and others. The more thorny issues to assess are those of aesthetics and cultural forms, and the level of the physical devices. In terms of the last, it is clear that the computer is aspiring to the condition of a metamedium, a machine which can display and handle all other media in some sense, while the mobile telephone effectively demonstrates this multimediality with the help of its onboard mini-computer. On this background, industry operators are pondering whether consumers will be satisfied by just carrying a multimedia mobile phone around, as well as a digital music player and a PDA. Or, if we look a few more years ahead, will our present devices be replaced by, or grow into, portable computers the size of mobile phones, with virtual keyboards and roll-out screens? When it comes to our homes, will we continue to have radios, music systems/players, newspapers, magazines, televisions, and computers, or will we be satisfied with one or more multimedial super computer(s) taking care of it all? The possible future of a multimedial super computer that can replace the television and the computer by combining the functionalities of both is much a matter of cost and of practicalities. For an expansion of our present televisions to allow us to browse the Internet and to have similar functionalities as our computers, they need to be equipped with basic computer components, which would incur additional costs. When it comes to our computers, they already handle video and audio streams, so minimal adjustments would seem to be necessary, except for the reading of analogue signals (which requires an additional tuner), but as the analogue net is about to be replaced by digital, this is hardly an issue. This means that social preferences may be more important than technical possibilities for assessing the effects of the convergence. Thus, one of the key questions becomes, will we want to have our work desk also be the site for aesthetic experience and entertainment, or will we move the device between our workspace and our living-room relaxation area according to our needs? Actually, it seems more reasonable to assume that we will have different devices in different places, tailored to the various uses in those places, and that those devices will have a degree of specialization rather than full multifunctionality.

The more complex issue is the convergence of aesthetics and cultural forms respectively. This is only to a limited degree a matter of digitalization, as cultural forms intermix and imitate each other throughout history. This issue has in fact been the subject of ongoing debates at least since Horace pointed to the correspondence between painting and poetry in his *Ars Poetica*, condensed in the phrase ‘ut Pictura Poesis’, (as is painting, so is poetry). This observation has provided a major reference point for such debates, especially after Gotthold Ephraim Lessing made it a key target of criticism in his *Laocoön* ([1766] 1984), followed up in Irving Babbitt’s *The New Laokoon: An Essay on the Confusion of the Arts* (1910), and with substantially greater impact in Clement Greenberg’s ‘Towards a Newer Laocoon’ ([1940] 1985), which may be the first powerful articulation of Greenberg’s view of modernism.
Greenberg is of special interest in this context, because, as I soon will show, he develops a conception of modernity that seems surprisingly interlinked with Bolter and Grusin’s concept of remediation. Greenberg implicitly suggests that the convergence of aesthetic forms take place with shifting intensity historically, and that the defining aesthetic of a period might first of all be characterized by undoing the effects of such a convergence. This is actually how he defines modernism. The definition springs from a concern with the way in which art forms may compromise their own nature in an effort to absorb the effects of, and to imitate the characteristics of, other art forms, particularly the dominant art form of the period. He says,

There can be, I believe, such a thing as a dominant art form; this was what literature had become in Europe by the 17th century. […] Now, when it happens that a single art is given the dominant role, it becomes the prototype of all art: the others try to shed their proper characters and imitate its effects.

(Greenberg [1940] 1985)

Greenberg comes to define modernism as a process of undoing the effects of such imitation, of purging the arts and their media from the impurity caused by the borrowing and absorptions of effects from other media. This process, he points out, becomes one of consolidating or entrenching an art form in its own area of competence. In ‘Modernist Painting’, Greenberg writes,

The essence of modernism lies […] in the use of the characteristic methods of a discipline to criticize the discipline itself, not in order to subvert it, but in order to entrench it more firmly in its area of competence. […] It quickly emerged that the unique and proper area of competence of each art coincided with all that was unique in the nature of its medium. The task of self-criticism became to eliminate from the specific effects of each art any and every effect that might conceivably be borrowed from or by the medium of any other art. Thus would each art be rendered ‘pure’ […].

(Greenberg [1960] 1993)

Thus, it seems that Greenberg is keenly interested in what we today are more likely to call ‘remediation’, which may be described as the adoption or absorption of the effects of one medium in another. In short, and from this perspective, it appears that Greenberg is describing modernism as remediation in reverse. The idea of modernism is to undo the effects of a previous remediation, which has levelled the differences between art forms, because these promiscuous arts thrive in imitating each other’s effects, that is, their artistic means.

It appears that we find ourselves again in a promiscuous time where media borrow effects from each other, not only because we may still be under the influence of a postmodern counter-reaction against modernism’s penchant for the purity of media forms, but also because digital technology encourages the playful recombinaton of media. This is one of the key features computer pioneers like Alan Kay sought to develop. The capacity of the computer for sampling and recombinating various textual elements, its
enhanced potential for post-production remixing of previous material, has contributed to an aesthetic of sampling which we can also see as adding to cultural convergence, where for example the art world and the world of media entertainment come closer. However, in this field of intermix, media hardly disappear. In fact, the aesthetics of sampling even allow old and outdated media forms and modes to be reborn into new contexts and to thrive. Yet another reason why media do not disappear so easily is our love for them, even when they may seem old and outdated. Their aesthetics seem to live on as they are utilized and recirculated in our digital phone cameras for example, which may have settings for sepia or solarization. Old film stock and the Super 8 format are often found in films and music videos. These anachronistic appearances testify to some level of truth in Marshall McLuhan’s statement ([1964] 2001) that ‘the medium is the message’, in that, at times, the specific medial quality may be of key importance to the aesthetics developed. In order to communicate in a rich way, we mobilize and use a number of media formats, in part because they help us articulate ourselves in rich and interesting ways.

Another obstacle for a generalized convergence, as envisioned by Kittler and others, is the lack of standardized formats, which brings us back to the very basis of a digitally driven convergence. Arriving at a common and practical format is just the first obstacle here. Agreeing on a standard often seems even more difficult, as major economic interests are at stake. Thus, we get the common situation of various forms of war between competing formats. Apple iPods, for example, employ a standard that carries more information than MP3 files, and therefore, sending an iPod music file to a PC-user with an MP3 player may leave the latter without a chance to hear the music. Similarly, the current battle between the Blu-ray Disc and High-Definition television echoes the war over formats that took place with the establishment of VHS as the standard video technology in popular use. Computer games continue to confront each other across a number of competing consoles, like Playstation 2 and 3, Xbox, Nintendo Gamecube and Wii. There is also the silent war going on between telephone companies and emerging Internet telephone providers that may eventually offer mobile services (Apple’s partnership with Cingular might be seen as an attempt to avoid such a possible standoff, by bringing the biggest mobile-telephone company on board rather than risking countermeasures from their side). Industrial strategies set in motion to act against competitors and secure profit for key players also work in part to halt technical convergence. These strategies and behavioural logics also defy any ideal operation of the free market, and instead seek to create and benefit from market situations that allow higher prizes than a freely functioning market would. This is the context in which we can see European regulators recent claims that iTunes should be compatible with all MP3 players, so that music bought from the iTunes Store can also play on devices from Apple’s competitors.

In short, the tendency to produce incompatible standards may be motivated to some extent by diverging convictions about the benefits of the various standards proposed, but it is also driven by the desire to undercut the workings of a free market and protect major companies from open competition. Thus, even on the technological level where digitalization cultural forms could, of course, be described from a number of other perspectives. For instance, a Bakhtinian perspective would assess voices travelling across texts and media, which is often done by way of the concept of intertextuality. Anna Everett (2003) pursues such a perspective in the development of her concept of ‘digitextuality’, meant to describe the particular textual form encouraged by digital media.
9. Krauss herself locates such a reinvention of the medium in James Coleman’s double portraits, which are photographic, but also invoke (or mediate) the medial forms of feature films and photo novels. A reinvention of the medium could also be claimed for Gerhard Richter’s photorealistic paintings, which seem to both redeem and re-actualize painting and photography at the same time as they are positioning themselves as neither painting nor photography. In fact, Richter himself claims to be doing photography, ‘by other means’. We must merely learn to accept that photographic emulsion and optical lenses are not integral to photography (see Richter 1995).

would seem to ensure a common platform, the picture is much more complex and riddled with conflicts.

Kittler’s conception of convergence implies a notion of a post-medium condition of some sort, an assumption that distinct media will become less important or even disappear, along with the concept of medium itself. Related notions are also put forward by Krauss and Manovich, respectively.

The post-medium condition and post-media aesthetics

After Kittler, we seem to be confronted with two major attempts to articulate a ‘post-medium condition’, as Rosalind Krauss (1999) calls it, or that of a ‘post-media aesthetics’ as it is labelled by Manovich (2001b). In her article, ‘Reinventing the medium’, Krauss discusses the shifting status of photography in the art world and how photography in part became a tool for deconstructing an art practice based on the specificity of the medium, be it the specificity of painting, sculpture, graphic print, or, ironically, photography itself. She argues that photography enters the art world, or, in her words, ‘converges with art’

as a means of both enacting and documenting a fundamental transformation whereby the specificity of the individual medium is abandoned in favor of a practice focused on what has to be called art-in-general, the generic character of art independent of a specific, traditional support.

(Krauss 1999b: 293–94)

Thus, photography is implicated in the enactment and the documentation of a change from a situation in which artists work within media (like painting, sculpture, graphical print and so on) to a situation that Krauss refers to as the ‘post-medium condition’. This casts photography in a new role, that of documenting various performances or ‘hors-media’ events where art practices have migrated beyond and outside established media forms to strategically and in ad hoc situations deploy various objects, actions, and events to convey conceptual ideas. Thus, in this ‘post-medium condition’, which Krauss also associates with postmodernism, practice, according to Krauss, ‘is not defined in relation to a given medium – sculpture – but rather in relation to the logical operations on a set of cultural terms, for which any medium – photography, books, lines on walls, mirrors, or sculpture itself – might be used’ (Krauss 1999: 289). This move away from the classic media of the academic tradition (which basically is thought of as painting, sculpture and graphic print), and from the modernism defined by Greenberg, which explored the medium specificity of painting and sculpture in particular, has according to Krauss left the artist in a ‘post-medium condition’ to explore ‘art-in-general’.

However, this ‘post-medium condition’ does not so much take away the media from artists as it refigures their functions and multiplies them. Because now, any medium can be used and almost anything can become a medium; even ice cubes might become media in conceptual ephemeral events, as well as streams of air hitting the spectator’s head inside the gallery space. But elements of other medial practices could also be implicated in medial situations which in part may redeem an interest in their specificity, or in Krauss’s words, ‘reinvent the medium’, or have these media serve ad hoc strategic purposes of different kinds.9
On this background, Krauss’s labelling of a situation in the modern art world – where artists no longer explore a single medium like painting and sculpture – as a ‘post-medium condition’ is somewhat ironic. The situation is partly defined by the fact that artists work across a range of different media, combining them pragmatically for various purposes and effects. We could see this as a move from the singular to the plural, from the medium artist faithful to the exploration of a specific means of expression, to the media artist defined by an adulterous pragmatism using whatever medium or combination of media that seem to work. Thus, ‘the post-medium condition’ might as well be labelled ‘the medium condition’, or ‘the condition of media proliferation’, for this ‘post-medium condition’ is one in which the artist constantly comes to choose certain media among the many possible. Whereas one medium conveniently can be called painting, or sculpture – most of the time without recourse to the concept of medium – a host of different medial options tends to render every one of them a ‘medium’. Under such a condition, most art might become ‘media art’, and most artists ‘media artists’ of some sort.

A further reason why artists become media artists is related to the political and cultural interventionist project of jamming – re-figuring, re-programming – important aspects of the culture articulated in ‘the media’. And by ‘media’, in this context, I mean major outlets like television, film, newspapers, media that in many ways define our culture, and that artists may feel compelled to comment on. This intervention will often employ the media formats that are being commented on and it may render the art ‘media art’, both in terms of its subject matter and its medial means.¹⁰

The challenge from Manovich’s notion of a post-media aesthetics is considerably greater in that it projects an end to media as well as to the concept of medium itself. This is first of all because Manovich’s conception of a post-media aesthetics is in part based on digitalization. But in his argument, an internal tension in the concept of medium also comes to the fore, a tension that goes some way towards explaining the persistence of the concept of medium allegedly faced with annihilation, for instance, the fact that the medium of film seems to have faint problems surviving the death of the celluloid filmstrip. Manovich starts his dismantling of the concept of medium by claiming that:

In the last third of the twentieth century, various cultural and technological developments have together rendered meaningless one of the key concepts of modern art – that of a medium. However, no new topology of art practice came to replace media-based typology which divides art into painting, works on paper, sculpture, film, video, and so on.

(Manovich 2001b: 1)

Manovich cites a number of reasons why the concept of the medium, in his words, is ‘rendered meaningless’. First, the proliferation of new artistic forms replacing traditional art threaten old typologies of media, sometimes with arbitrary combinations, sometimes even as dematerialized ‘conceptual art’. The introduction of modern media like video provides yet another challenge in that, as Manovich writes, the

¹⁰ Within the art world itself, however, the term ‘media art’ remains contested and riddled with uncertainty as to what it should mean. It has been used in a more specialized meaning to designate a particular kind of art where the logic of the medium itself is explored and where the medium involved is preferably digital. From this vantage point strategies of inclusion have been attempted to integrate ‘media art’ (or ‘new media art’) into the established art world (see Grau 2007). Such a conception of media art has come up against at least two problems. First, it risks holding onto a Greenbergian conception of art as an interrogation of the medium used. In the face of art’s social turn, this risks rendering ‘media art’ dated and without contemporary sensibility (see Bourriaud 2002). Second, the interpretation that all art uses some kind of medium and is therefore by definition media art risks a certain redundancy. The crisis for the concept of ‘media art’ has manifested itself in the removal of the concept of medium from the German art festival transmediale – international media art festival, which now is renamed transmediale – festival for art and digital culture.
11. This is one of the conceptual issues Noel Carroll discusses in the three first chapters in Theorying the Moving Image (1996). A demonstration, was defining chemistry of much chemical mechanisms, along with other sociological differences [...], became more important criteria in distinguishing between mediums than the distinctions in material used or conditions of perception. In short, sociology and economics took over aesthetics.

[original emphasis] (Manovich 2001b: 2–3)

In order to strengthen his suit, Manovich does not play the digital card early in his discussion. Rather, he attempts to make a strong case for a crisis of the medium existing before digitalization. And he manages to do so to some extent, but even more, his argument comes to lay bare the inherent complexity in the concept of medium itself. His account starts off with an assumption that the concept designates the medium’s technological base, or what in the language of art history and criticism is usually designated ‘the material support’. Eventually, however, Manovich comes to describe what we might call a metamorphosis in which the concept of medium comes to be based as much on other parameters. The parameters Manovich nominates for distinguishing between media may actually form part of a richer conception of medium, made more urgent by these acts of disappearance and of migration away from the initial material supports on which the medium was conceived. Apart from ‘material used’, which otherwise can be referred to as media technology or material support, he mentions ‘distribution mechanisms’, ‘conditions of perception’, and lastly, the less clearly defined ‘other sociological differences’ (Manovich 2001b: 3).

The key observation here, which may seem paradoxical, is precisely that the medium of film survives so effortlessly the death of its medium, in the sense of its technical support. Photography as well now seems to thrive on its new digital platform; in fact, it thrives to such an extent that it seems almost unreal to think of the repeated death sentences it received during the 1990s as its material support became destined for the technical museum. In the face of such changes, Manovich notes that ‘despite the obvious inadequacy of the concept of medium to describe contemporary cultural and artistic reality, it persists. It persists through sheer inertia – and also because to put in place a better, more adequate conceptual system is easier said than done’ (Manovich 2001b: 4). If the concept persists, it is because people insist in using it. And when the concept of film, for example, seems to survive even when films are often not shot on film, it is because the concept of medium is much more complicated than we often realize, and this is precisely what Manovich comes to articulate in the parameters above.

Revising the concept of medium

Basically, the concept of medium seems to involve a lot more than the material support it is often associated with, as can be seen in a number of definitions, which Bruhn Jensen points out in his article ‘Mixed Media’ in this volume. If we take as a vantage point the parameters Manovich suggests, beyond the medium technology (or technical support), we have
‘distribution mechanisms’, ‘conditions of perception’, and the less clearly defined ‘other sociological differences’. Without aiming for any fully coherent conception and avoiding internal overlap, we could perhaps add ‘sociocultural use’ along with the ‘aesthetic practices’ associated with such use.

What complicates the picture, but also makes it more interesting, is that it seems that the concept of medium, the way that it is currently used, is capable of migrating between these parameters which make up the concept of medium, rendering some more important sometimes, and others more important at other times. Thus, the emphasis on the various aspects defining a medium may be shifting. At times, the technological aspect of the medium seems of central import, while at other times the formal, thematic, and aesthetic aspects, or ‘distribution mechanisms’ and ‘sociocultural uses’ come to the fore. W.J.T. Mitchell captures this complexity well, when he fits this difficult term with the following elusive description:

An image appears only in some medium or other – in paint, stone, word, or numbers. But what about media? How do they appear, make themselves manifest and understandable? It is tempting to settle on a rigorously materialist answer to this question, and to identify the medium as simply the material support in or on which the image appears. But this answer seems unsatisfactory on the face of it. A medium is more than the materials of which it is composed. It is, as Raymond Williams wisely insisted, a material social practice, a set of skills, habits, techniques, tools, codes and conventions.

(Mitchell 2005: 203)

In terms of the position of the concept, Mitchell adds, ‘[t]he concept of a medium [...] seems [...] to occupy some sort of vague middle ground between materials and the things people do with them’ (Mitchell 2005: 204). But the vagueness of this ‘ground’ can be clarified, I believe, by studying how the concept operates in actual cases. Then we might find that different aspects of the concept will be at play at different times. If we limit ourselves to what it is possible to say about the medium of film, we can get an illustration of the multifaceted nature of the concept of ‘medium’, and of how its various aspects can be actualized in almost paradoxical ways. It has been noted that the medium of film is dying because film stock is being replaced by digital video. In this case, the medium of film is referred to in terms of its technical support. If we counter that films survive because people simply love stories told in an audio-visual format, what is referred to is the medium of film as a cultural and aesthetic form. If we say that films will still die because theatres that show films lose their audiences and will soon have to close, we are conceiving of the medium of film in terms of its primary viewing practice in theatres, more than in terms of the technical support and the cultural and aesthetic form.

These complexities relating to the concept of medium have led to recent attempts to clarify and to define the concept. In the article ‘Convergence? I Diverge’, Henry Jenkins proposes to distinguish between media, genres and delivery technologies. He claims: ‘Recorded sound is a medium. Radio drama is a genre. CDs, MP3 files and eight-track cassettes are delivery
13. The concept of delivery technologies serves to detach the concept of medium from the realm of technical support. The concept of genre works to protect the concept against shifting aesthetic and cultural practices.

14. From his initial attempt to clarify the concept, Jenkins has also found Lisa Gitelman’s work on the concept useful, without having that interest amalgamate into a coherent position. Gitelman proposes to ‘define media as socially realized structures of communication, where structures include both technological forms and their associated protocols, and where communication is a cultural practice, a ritualized collection of different people on the same mental map, sharing and engaging with popular ontologies of representation’ (2006: 7). She recognizes, that ‘[d]efining media this way admittedly keeps things muddy’ (2006: 7). In spite of saying, somewhat later that, ‘the “materiality” of media is one of the things that interest me most’, her definition is not clear as to what extent technological support or media materiality is admitted into her definition.

Technologies. Genre and delivery technologies come and go, but media persist as layers within an ever more complicated information and entertainment system’ (Jenkins 2001). This might seem clarifying. But if recorded sound is a medium, and not CDs, what other media are there and is it possible to invent new ones? These questions are implicitly answered by Jenkins five years later as he lists the following media, ‘spoken words’, ‘printed words’, ‘cinema’, ‘theatre’, ‘television’, ‘radio’ (Jenkins 2006: 14). One could try to continue this list by adding ‘book’ and ‘newspaper’. But these seem partly superfluous when ‘printed words’ are already mentioned. In fact, ‘book’ and ‘newspaper’ could well be regarded as mere delivery technologies for the medium ‘printed words’. Likewise, radio might be regarded not as a medium, but as a delivery technology for the medium ‘spoken words’, or perhaps even better, for ‘recorded sound’. In short, the framework proposed by Jenkins is not entirely satisfactory, but it is productive in provoking us to rethink the concept of medium.

The strategy behind making ‘recorded sound’ a primary example of what a medium is, could be to protect the concept of medium from the creative turmoil that takes place in the realms of technological and social inventions on the one side, and cultural and aesthetic inventions on the other. But the outcome is not so much to protect the concept as to undermine its relevance. For if it merely designates allegedly stable medial forms like ‘recorded sound’, ‘printed words’, and traditional media like radio, television, and cinema, it need not be on everybody’s lips, like it is today.

Whatever the strategy, what is negated by making ‘recorded sound’ a primary example of what a medium is, is the multiple aspects of the concept, and its migratory flexibility in which different aspects seem to be emphasized at different times. Any attempt to admit the concept only one dimension, be it technical device, cultural or aesthetic practice, form of perception, or socio-economic mode of circulation, or medial form like ‘recorded sound’, belies this multiplicity.

The inherent richness and flexibility in the concept of medium is an important reason why the predictions of Kittler and Manovich – that the concept will become obsolete in the wake of convergence – may not hold up. If the concept is ‘rendered meaningless’ (Manovich) in one of its aspects, it may still persist as long as it is meaningful in terms of other aspects. Another reason, of course, is that media forms do not so much disappear as they reappear, through acts of remediation and recirculation.

The conception of ‘medium’ put forward here may also help us to explain and assess how creativity and renewal take place within a medium. Manovich suggests in his contribution to this volume that new media remain perpetually new because they are made up of software that is being renewed. This is a suggestive idea, but once we see the many aspects of the concept of medium, we see that updates to the software first of all renew one aspect of the medium, namely its technical basis. What implications this will have in terms of other aspects of the medium, its cultural and aesthetic forms, or the logic of production and distribution characterizing it, is uncertain. In fact, technical changes (for example, in terms of software additions) need to be accepted, and utilized, so that they have consequences on other aspects of the medium as well, for them to be truly effective in
contributing to a change of the medium as a whole. This suggests that certain technical extensions will hardly be significant, whereas others may lay the basis for powerful reinventions of the medium, through their impact on aspects like aesthetic practices, sociocultural use, distribution mechanisms, and audience practices.

The globalization of software additions

I started this discussion by referring to Kittler’s prediction that ‘[t]he general digitalization of channels and information erases the differences among individual media’. And I have used much of the space to raise objections against the powerful convergence envisioned by Kittler. I also suggested above, however, that the gist of Kittler’s prediction still seems succinct. Let me now qualify this beyond the obvious presence of the metamedia, which our computers and our mobile telephones now represent. When assessing the consequences of digitalization, instead of talking about the erasure of differences, and to judge the level of convergence by the amount of differences erased, it may be as productive to talk about the addition of similar traits, viewing this as a major source fuelling convergence.

The remediation of most media on a digital platform is about to make all media ‘new media’, in the sense that they are all empowered by computer technologies in one way or another. Hence, they are also more or less subject to the addition of new properties, beyond the new affordances they may already have been granted as part of their digitalization. A basic logic of the computer is therefore coming to redefine both the production and the reception processes related to media, to the extent that computers are involved in media production and consumption. Manovich has commented on this in The Language of New Media where he says

The logic of a computer can be expected to significantly influence the traditional cultural logic of media; that is, we may expect that the computer layer will affect the cultural layer. The ways in which the computer models the world, represents data and allows us to operate on it; the key operations behind all computer programs (such as search, match, sort, and filter); the conventions of HCI […] influence the cultural layer of new media, its organization, its emerging genres, its contents.

(Manovich 2001a: 46)

In short, with the pervasive presence of computers in the handling of media, the latter have come to be affected by what we can call a ‘globalization effect’ in which their new affordances come to be ones which the computer can provide to most media, and which feature as standard menu options in most applications. In other words, what we seem to get is a form of convergence by means of a globalized remediation, a remediation where previous media have been remedied by expansions to their powers that tend to be similar. Simply put, by being more and more supported by and interwoven with the computer, media now are increasingly profiting from the enhancements the computer can offer. As the computer tends to offer similar enhancements to most media, a convergence by means of globalized remediation takes place. A couple of examples may lay this out in more detail.

15. These are, of course, functions like copy, paste, search, save, but also other specialized options that only some users will end up using. An illustration of the potential in this can be found by looking at the plug-ins for the Firefox browser.
In its digital version, the New York Times offers photographic slide shows, film clips and music. The original newspaper, just like any printed matter, magazine or book, cannot display time-based media, but its remediated version on the Web can. And it becomes increasingly effective in doing so as the capacity of digital networks increases. Film provides another example of computer-augmented affordances. Animated films used to be able to depict events that were impossible to relay in live-action cinema. When live-action film is enhanced by digital production technologies, however, its affordances increasingly come to involve the stunning effects of animated films, and these effects can now be offered in photorealistic quality.  

The increased affordances generated through digitalization may be said simply to reflect the characteristics of the computer as a metamedium, its ability to handle most, if not all, previous media, albeit within the parameters of its interface. This sets in motion a development that may eventually make most media capable of displaying most other media. This tendency is illustrated by the broadcaster BBC which features newspaper-like articles on their websites, complementing their television and radio programmes, and newspapers like the New York Times which features television offerings on their website, complementing their printed matter. As Manovich puts it in his contribution to this volume, "it is as though different media are actively trying to reach towards each other, exchanging properties and letting each other borrow their unique features". However, the ways in which this will pave out, and the actual forms it will take, still remain to be seen given the high level of dynamism and turmoil in the field.

Conclusion

All in all, what we have before us is a complex picture in which convergence is a powerful tendency, continuously counteracted by powerful counter-tendencies holding back on a full convergence that might promise to erase the differences among individual media so as to have us end up with merely one mediatory device. The picture is one in which a number of obstacles – such as multiple formats, copyright holders’ resistance against copying, storage, and manipulation, and not least our attachment to media aesthetic diversity – continue resisting universal convergence. At the same time, however, convergence works powerfully to make files compatible, to have devices communicate with each other, and to endow media with globally shared features. This means that our many media do not disappear to be replaced by one, or even just a few. Nevertheless, this is no guarantee that our concept of medium will persist.

As long as we have a multiplicity of media as competing alternatives to consult, to express ourselves in, or to comment on, we may find the concept of medium relevant. In the heyday of painting and sculpture in the art academy, when relatively few media alternatives were around, the need for a concept like ‘medium’ was hardly a matter of urgency. Some of the changes in the field of media – the occurrences of new means of communication, like SMS, MMS, Skype, Instant Messenger, etc. do not necessarily urge the use of the concept of medium. We may often be content talking about them as ‘applications’, or we may just refer to them using names like ‘Skype’, or ‘Messenger’. In fact, the proliferation of
media in the guise of new applications, which digitalization has brought, may represent a new threat to the concept of ‘medium’, in that we just do not conceive of ‘medium’ as the proper descriptive word for these new media. Thus Kittler’s predictions about the erasure of ‘the very concept of medium’ may be well worth reassessing in another ten or twenty years. In the mean time, we are likely to see more bids on how the concept should be defined.

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