

Interfacing Television: TiVo, Technological Convergence, and Everyday Life

Convergence has emerged as one of the key concepts for understanding how media technology are changing in the 21st century, as existing media develop through both institutional and technological mergers, redefining the concept of “multimedia” in unforeseen ways. Most of the scholarly explorations of convergence either focus on the institutional forces at work in actively promoting convergence, or offer theoretical visions of a digital future at an often abstract macro-level – both of these tendencies can certainly lead to a better understanding of where we’re going, but this is not where media convergence will be most felt at a cultural level. I believe we must ground our analysis of media convergence in the specific practices of everyday life experiences, the domestic mundane settings in which media are most used. How will technological convergence be experienced by average media users? Where will converging technology reside within domestic spaces? And how will multimedia systems replace, augment, and redefine television, still the dominant media technology of today? This presentation takes a brief foray into these issues by looking at one of the key developments in convergent media technology that has hit the market, the digital video recorder (DVR), and exploring how it functions to transform traditional conceptions of television as a medium.¹ I will argue that DVRs drastically alter our temporal and experiential relationship to television, primarily through the creation of a digital interface to the traditionally “live” medium of television.

Within the area of new media studies, explorations of interfaces as modes of cultural practice have been a productive area of analysis. Lev Manovich argues that in

¹ For an excellent discussion of the institutional contexts of DVRs, see William Boddy, "New Media as Old Media: Television," in *The New Media Book*, ed. Dan Harries (London: British Film Institute, 2002).

the realm of new media, the traditional dichotomy of content/form should be reconceived as content/interface.² The interface to data within a computer shapes our experiences with its content, setting the parameters for the user's relationship to the medium as a whole. Sherry Turkle, Steven Johnson, and Neal Stephenson have all explored the metaphoric means by which we relate to our computers through interfaces, highlighting how virtual desktops, folders, and icons shape our engagement with increasingly opaque interfaces to the digital world.³ As computers and television begin to converge, television scholars will need to look to questions central to new media studies and ask them of our own media – thus we should consider how do interfaces operate within television?

The question of interface is rarely raised within television studies for a number of reasons. Following from its ancestry within text-based literary and cinema studies, critical television studies typically explores the level of content and form in lieu of broader examinations of the medium as a whole. Additionally, we are still influenced by the work of Raymond Williams from 30 years ago, which both closed the door on technological determinism and established the standard metaphor we use to conceive the structure of the television experience – flow – in which the television schedule functions as the primary structure for viewers.⁴ Finally, one could argue that television studies need not examine interfaces simply because the technology itself lacks an interface – what we see on the screen is not mediated by artificial metaphors of icons and desktops, but the rather is the direct transmission of media texts.

All of these points certainly have some merit, although I think we need to look beyond these limitations to consider what we might be missing. Joshua Meyrowitz has convincingly argued that media scholars need to consider how media operate on the

² Lev Manovich, *The Language of New Media* (Cambridge, MA: MIT Press, 2001).

³ Steven Johnson, *Interface Culture : How New Technology Transforms the Way We Create and Communicate* (New York: Basic Books, 1997), Neal Stephenson, *In the Beginning ...Was the Command Line* (New York: Avon Books, 1999), Sherry Turkle, *Life on the Screen: Identity in the Age of the Internet* (New York: Simon & Schuster, 1995).

⁴ Raymond Williams, *Television : Technology and Cultural Form* (Middletown, CT: Wesleyan University Press, 1992).

three levels of content, grammar (or form), and medium environment, suggesting that this latter focus consider how certain properties of a medium shapes cultural experiences beyond the level of individual programs or texts.⁵ Work on the social construction of technology reminds us that even though technologies do not *determine*, they still matter – technological systems both shape and are shaped by social forces, and thus must be explored as part of the agenda of cultural analysis of media. By considering the cultural circulation of technologies – in addition to the technical limitations and institutional norms that have traditionally been the purview of technology studies – cultural studies of media can explore the complex interplay of technologies as they relate to both top-down exertions of institutional power and bottom-up practices of everyday life.

But what of the claim that television studies need not examine interfaces because they simply are not there? I believe that there have always been interfaces which television viewers use to access the programming that typically comprises the object of our study. In the early decades of the medium, television's primary interface was the dial – a holdover from radio, the tuning dial was the analog system that needed coaxing to successfully receive a television signal. In conjunction with an antenna system and a series of knobs controlling vertical and horizontal hold, contrast, and later color, this technological interface shaped our relationship to the medium – once a decent signal was found, you were reluctant to change over to other channels. One of the most significant effects of this interface was to encourage the system of flow observed by Williams, as the difficulty of the interface encouraged consistent viewing of singular channels – going with the flow.

New interfaces developed to alter our experiences of the television medium. The rise of electronic tuners, remote controls, and cable television all altered the television interface – making it simpler to change channels enables viewers to disengage from the

⁵ Joshua Meyrowitz, "Images of Media: Hidden Ferment--and Harmony--in the Field," *Journal of Communication* 43, no. 3 (1993), Joshua Meyrowitz, "Medium Theory," in *Communication Theory Today*, ed. D. J. Crowley and David Mitchell (Stanford, Calif.: Stanford University Press, 1994).

flow, encouraging the mode of channel surfing that typifies many viewing practices today. But interfaces are notable not only for the practices they enable, but also for the possibilities that they lack. For most of television's history, the interface did not include a mechanism for notifying viewers what they were watching, outside of the channel number. Thus unlike books, musical recordings, and magazines, there is no "cover page" to reference while watching a program; to know what content you've turned to, you either need to hope the program clues you in (via credits or bumpers) or you need to go to a supplementary external interface: *TV Guide*. Through digital convergence, this facet of television's interface has changed, as online program guides offer running schedules, and digital cable or satellite viewers can hit a button on their remote to answer the central yet previously obscured question of what they are watching.

Another key development in the history of television interfaces is of course the VCR. As Ann Gray and Sean Cubitt have analyzed, time-shifting with VCRs enable viewer control and agency over the temporal experience of television.⁶ Clearly time-shifting as a practice disrupts a number of the central metaphors associated with television and its traditional mode of presentation: flow, liveness, presence and synchronicity. The VCR as an intervening technology to access television programming enables time-shifting, which may be the most significant development in the history of televisual interfaces. Yet I think the VCR will be viewed in hindsight more as an intermediary step, as the limitations of its interface have made time-shifting an *exceptional* rather than *typical* practice, even among the majority of viewers who own VCRs. A notoriously user-unfriendly technology – crystallized in the phrase "the blinking twelve problem," referring to any technology whose features are too difficult for the average user to actually use – most people who have VCRs use them primarily for playback of pre-recorded tapes rather than time-shifting or archiving. Even among the exceptional users who do time-shift (which has become easier through improvements in interface design), it still becomes an exceptional practice within the

⁶ Sean Cubitt, *Timeshift : On Video Culture* (London ; New York: Routledge, 1991), Ann Gray, *Video Playtime : The Gendering of a Leisure Technology, Comedia* (London ; New York: Routledge, 1992).

larger context of TV viewing – viewers only time-shift programs which are exceptional in quality (to their personal tastes, of course) or that cannot be view within the typical TV flow due to exceptional conflicts in scheduling. The VCR's technical limitations, both in its typically clunky interface and requirement for a constant shuttling of tapes, does not encourage users to make time-shifting the default mode of interfacing television.

And thus we come to Digital Video Recorders. I believe that DVRs do more than encourage an increase in the ease and degree of time-shifting afforded by VCRs; I argue that they present a more substantive break in the use of television through their digital convergence, enabling a merger of interface norms as established in both television and computer realms. Thus in examining the user practices enabled, encouraged, and limited by DVR technologies, we can see how media convergence reconfigures the everyday experiences of television. A brief clarification though – throughout my discussion I will use the term TiVo as exemplary of DVRs in general. This is partly motivated by my own consumer habits, but also since TiVo has emerged as the leading brand of DVRs, it is gaining a generic recognition much like leading brands like Kleenex or Band-Aids. Other DVRs like ReplayTV or UltimateTV work similarly enough to TiVo, although I will discuss other non-television DVRs based on computers that operate somewhat differently as interfaces.

The first key difference between the VCR model of time-shifting and TiVo's interface involves modularity. With a VCR, you must actively choose to time-shift, going through the often fraught process of programming your machine to record a program, and then later using the VCR to play it back. With TiVo, you are always in the time-shifting mode, as its interface is actively standing-by, ready to time-shift – pausing live television, rewinding up to thirty minutes of material, or recording an entire program even while mid-way through. If time-shifting is an exceptional practice for a VCR, it is the norm with TiVo – our default mode of using a DVR is always ready to disengage from the schedule-driven framework which traditionally structures the experience of watching television. This suggests much more radical breaks with the

typical ways we interface with television, as TiVo causes flow, liveness, presence and synchronicity to become the exceptions, not the defaults.

This shift is not only on the level of technological possibility, but more importantly embodied in the way we use DVRs. Once most TiVo users have gotten a hang of the comparatively simple user interface (modeled after a standard computer menu system), watching live TV becomes a last resort. Whereas the norms of flow and synchronicity privilege the role of the television schedule to determine what and how we watch, TiVo takes the schedule offline, enabling viewers to turn the various options within the television schedule into a menu of potential files to be downloaded into your own personal database of programming. This database logic is of course one of the defining attributes of new media, according to Manovich, as he claims new media objects primarily function as interfaces to an underlying database. You could extend this claim to suggest that conventional television functions similarly, with the dial or remote control allowing viewers to interface with the database of the television schedule. But the tuner is an inherently analog interface, as the programs are available only in a predetermined sequence following the mass-produced and externally-imposed logic of the network schedule.

For TiVo viewers, television becomes a distinctly asynchronous medium – the only determining temporal factor is when a program first becomes available for recording. TiVo viewers become collectors of television programs, assembling their own menu of television options to choose from at any given time for, in the words of a trade journal, an evening of “non-linear viewing.” As befits the database logic of a collection of items, time must be spent maintaining and updating the collection – personalizing TiVo’s ‘To Do List’ of upcoming programs to record, maintaining Season Pass and Wish List items to automatically download desirable programs, and making the tough choice of what to delete unseen or what to archive to the external storage medium of videotape. This practice of file and database management is not the way most people watch television, but it may sound familiar in the context of managing a computer’s hard drive – backing-up, downloading, organizing and deleting files to

make sufficient space is the logic of computers, brought to television through this system of convergent interfaces.

This transformed televisual interface changes the way TiVo users watch television programs as well. When watching a program – either “live” or from a menu – viewers can pause for a break, rewind to repeat a moment for clarification or pleasure, and of course fast forward through most advertising. When choosing what to watch, the contents of TiVo’s hard drive often serve as both a wealth of options and a burden, an agenda of things to watch to clear space for future programs. More significantly, TiVo discourages certain forms of television viewing that are typical of conventional interfaces – channel surfing is moot, as the live program guide provides a quick assortment of identifiable options if the menu of recorded programs doesn’t hold any appealing options. TiVo users need not arrange schedules to view a program, as TiVo reschedules any “appointment television.” Scheduling tricks like “hammocks” or “lead-ins” are rendered ineffective, as a channel’s flow loses power to guide viewing preferences. The television rarely functions in the background, as anything deemed worth recording deserves more attention than wallpaper viewing. And the feeling that nothing is on becomes nearly extinct – TiVo always has worthwhile options on tap customized for the viewer’s tastes. These ways in which we have traditionally interfaced with television, both technologically and socially, disappear as the TiVo interface becomes the default mode of engaging with television. This becomes particularly significant as many aspects discouraged by TiVo, like indiscriminate audiences, aimless surfing, and background viewing when nothing’s on, are facets of television that have been specifically linked to cultural condemnations of the medium. Perhaps as DVRs become more widespread, many of the negative cultural associations of television viewing will erode in the face of a more conspicuously active mode of viewing.

There are of course some exceptions to the typical mode of TiVo time-shifting. Some forms of programming seem to still demand liveness as an aesthetic. For me, sports, news, and special events hold little appeal to record – these genres still seem

important to be experienced live, although other DVR users certainly do regularly record these genres to filter through the ads or watch on their own schedule. Despite these exceptions, it seems that liveness and synchronicity are less defining characteristics of the television medium as a whole today as it once was, but are more linked to specific genres and content, as well as particular viewing preferences and practices that vary among different audiences. The need for synchronous viewing of a program – be it a sporting match or a significant event like a series finale – highlights the conscious way in which DVRs foreground the cultural practices of televisual taste.

The TiVo interface highlights the hierarchies of taste viewers use to navigate their way through the typical interface of the television schedule. By removing the temporal determinations of television broadcasting, TiVo enables viewers to exercise their tastes in much more direct and conscious ways. In negotiating the traditional schedule, viewers certainly make conscious taste decisions in choosing what shows function as “appointment television,” what they seek out if they are available, and what they’ll watch only they stumble upon it. TiVo automates this process somewhat, which requires these choices to be made more explicitly. In deciding that a show deserves a Season Pass (in which every episode will be automatically recorded), viewers rank it within a list of programs in the Season Pass menu to determine recording preference. Thus you must consciously prioritize which programs should be recorded in case of schedule conflicts. Likewise you can assign every program a ranking of one to three thumbs up or down, with these taste preferences dictating the collaborative filtering software to enable Tivo to fill the empty spots on your hard drive with programs that match your taste profile. Wish Lists can be used to automatically filter the schedule to highlight particular genres, stars, directors, or themes as dictated by viewer’s explicit articulations of taste. Through the TiVo interface, taste becomes an active and conscious practice, not an underlying set of behaviors guiding choices. This foregrounding of choices and engagement with taste makes the television watching

process more active and selective, moving distinctly away from the broadcast model of shared common programming and toward a more segmented experience, although the niches created are less driven by advertiser profiles and more by individual tastes and practices.

Although TiVo offers exciting possibilities for redefining television viewing, there are significant limitations of the interface, especially in the framework of media convergence. TiVo merges the framework of computer interfaces into the television medium, importing the database logic, modular personalization, and temporal flexibility that is more typical of digital media. However as a computer interface, TiVo leaves a lot to be desired. There is almost no ability to customize the way the interface looks or is organized – imagine if everyone’s computer desktop and file structure were forced to be identical. The files themselves are opaque, allowing no editing or manipulation – or even arranging in folders or sorting in various orders. As is well publicized, digital programs cannot be copied or transferred onto other computer or DVR systems (although ReplayTV does have some ability to export files). Even playing the television programs lacks typical digital features like random access to specific moments, as navigation is limited to fast forward and rewind like a VCR. If the TiVo interface was found on a computer, it would seem hopelessly arcane and limited given the norms of file maintenance typical to today’s computer media. However for television, it is a bold new interface that breaks nearly every established norm for the medium. This is one of the key facets of technological convergence – the cutting edges of different media are often staggered, and thus we have to be aware of the ways in which various norms and expectations linked to particular technologies can be altered significantly when transformed into another medium.

This contrast is made most vivid by looking at another incarnation of convergent DVR technology. A range of hardware and software products can be added onto a computer to provide it DVR functionality, downloading programs and storing them

onto your hard drive, such as EyeTV for the Macintosh. Since these systems operate within on a computer, their potential is more in keeping with the norms of a computer interface. Once files are recorded, they can be saved as a Quicktime Movie, exported onto a Video CD, or even edited to eliminate commercials or capture a specific clip. The interface for watching programming is much more typical of the flexibility of the computer interface, enabling random access and more varied manipulation of the video files. Thus the interface on computer-based DVRs treats programs as more typical computer files, exploiting the technical possibilities and flexibility enabled in digital media, and highlighting the way TiVo is an awkwardly limited specimen of media convergence. However the drawbacks of the experience are typical of the computer interface as well – the limited screen size, sound quality, somewhat lower video resolution, and the declining but still prevalent cultural stigma against watching media on a computer. Additionally, since computers are generally not dedicated to this sole DVR purpose, they lack the taste-centered features like automatic program recording and personalized wish lists. The differences between the television and computer incarnations of the DVR interface suggest how even through media convergence, technologies retain certain norms and expectations. The cultural practice of convergence requires the blurring of traditional assumptions about the proper uses and interfaces offered by various media technologies. With TiVo, we can see how the norms of the computer transform our television experience through the creation of a digital interface; to understand media convergence, we need to look at how convergent technologies are adopted and integrated into the everyday life of media consumers, as the changes fostered by these technological developments will be experienced on this micro-level.

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