Network Television Streaming Technologies and the Shifting Television Social Sphere

Media in Transition 6: Stone and Papyrus, Storage and Transmission

Cambridge, MA, April 26, 2009

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Abstract

This paper builds upon and updates previous work on the social influence of television viewing to account for the novel forms of viewing provided by streaming television services like the ABC Full Episode Player and Hulu. Based on examples taken from those two interfaces, the paper details the relative affordances and constraints that streaming interfaces offer the television viewer, and points to the ways in which those factors might reshape the social impact of television. In particular, the paper highlights three potential impacts of streaming technologies: increasing television's spatiotemporal ubiquity, shifting the social-spatial dynamics of the viewing area, and encouraging more selective – or perhaps biased – viewing behavior. These thematic findings emphasize the distinctiveness of the social phenomena surrounding streaming television relative to broadcast television and, as such, underline the need for further empirical work on the user-end impacts of streaming.

Introduction

In January of 2009, the Nielsen Company reported that the average American had spent more than 151 hours per month watching television over the last three months, plus seven more watching programs they had recorded (Nielsen 2009, 1). In a 30-day month, that works out to just over five hours of television per day – making TV-watching the third-most-common use of our time, below only work (9.5 hours) and sleep (6.8), and by far the most dominant use of our *leisure* time (National Sleep Foundation 2008). Given the sheer quantity of time we spend watching television, then, it follows that *the way we watch* – that is, the way we spend more than a fifth of every day – must have an impact on the patterns of sociality we enact in our daily lives. And at present, the way we watch is changing – from home-based consumption of broadcast or cable programming on standard television set[1] to geographically indeterminate consumption of streaming television programming through internet-connected computing devices.

Although the same 2009 Nielsen study found that Americans spend a comparatively miniscule average of 2.8 hours per month watching video online – less than 2% as much time as we spend watching broadcast or cable – the popularity of streaming television viewing is rising. Though the number of hours spent viewing streaming video may still be low, Nielsen reports, the *number of viewers* for such video sites is much more substantial: over 123 million individuals as of late 2008 – about 43% as many as reported watching standard television over the same period. And this trend emphatically extends to online network-TV viewing in particular: one network streaming site, Hulu, reported that in less than one year, its usage jumped by a factor of five – from 63 million videos served in April 2008 to 308 million in February 2009 (Kilar 2009) – making it the sixth-most-popular online video site on the web as of last December (Learmonth 2008). Given these trends, it is worth considering what effect such novel technologies for watching television might have on the social dynamics that have grown up around standard modes of viewing, even as the content being viewed remains largely constant.

As Joshua Meyrowitz argues in *No Sense of Place*, the differential social spaces surrounding media consumption can impact social life in simultaneously subtler and more dramatic ways; as he puts it, "Electronic media affect us…not primarily through their content, but by changing the 'situational geography' of social life" (Meyrowitz 1985, 6). The social impact of television, for

[1] "Standard," for these purposes, refers to the full range of TV set types currently in use – tube, plasma, LCD, projection, etc. – essentially, monitors with integrated television signal receivers, potentially connected to cable boxes, DVRs, and/or other signal receivers or recording devices. For the remainder of the paper, I will refer to this set of technologies as the "standard" or "traditional" mode of viewing.

Meyrowitz, is much more than the sum of its programming: the technology of transmission itself creates a context for social action and interaction. Building upon these concepts, Meyrowitz goes on to elaborate an architectural analogy for media analysis, asserting that,

> media, like physical places, include and exclude participants. Media, like walls and windows, can hide and they can reveal. Media can create a sense of sharing and belonging or a feeling of isolation and exclusion. Media can reinforce a 'them *vs.* us feeling or they can undermine it (Meyrowitz 1985, 7).

Following this logic, the structures of electronic media like television, in combination with the spaces that surround them, shape behavior and social life by demarcating a particular range of possibilities for action.

In this sense, Meyrowitz's architectural analogy strongly echoes the concept of affordances and constraints introduced first by J.J. Gibson in 1977, and particularly the later elaboration of these concepts offered by Donald Norman in his *Design of Everyday Things*: namely, that "Affordances suggest the range of possibilities, constraints limit the number of alternatives" when presented with any given object (Norman 1990, 82). Affordances and constraints, for Norman, are essentially tied to one's perception of them, and are thus influenced not only by an object's physical attributes, but also by the cultural conventions attached thereto. For example, Norman notes that

> A chair affords…support and, therefore, affords sitting. A chair can also be carried. Glass is for seeing through, and for breaking. Wood is normally used for solidity, opacity, support, or carving. Flat, porous, smooth surfaces are for writing on. So wood is also for writing on (Norman 1990, 9).

The fact that a chair can be carried is an inherent physical property – either one can lift the chair or one cannot – the fact that flat surfaces "are for writing on," by contrast, is a matter of cultural convention – it is not only physically afforded by the object, but culturally endorsed by common practice. The affordances and constraints presented by standard television technologies similarly imply a particular range of actions, including – but not limited to – watching together, watching alone, channel-surfing, sitting on a couch, doing other things while watching, time-shifting programming, fast-forwarding through commercials, and passively watching whatever comes on. By contrast, the affordances of streaming interfaces include watching not only at home, but also at work, school, or elsewhere; directly selecting each and every piece of content one watches; inability to skip commercials; time-shifting without forethought; and social interaction within the television interface itself.

In this analysis, I will first present a set of themes that emerge from literature on the social impacts of television-watching, particularly related to the spatiotemporal, micro-social, and communal aspects of viewing. I will then suggest how these themes might shift with the adoption of

streaming interfaces, using examples from two representative streaming sites: the ABC Full Episode Player (ABC-FEP) and Hulu.[2] The novel affordances and constraints presented by these and similar streaming services, I argue, have the capacity to alter television-related social phenomena along three dimensions: the spatiotemporal ubiquity of viewing, the micro-social dynamics of the viewing space, and the selectivity – or perhaps bias – of viewing behavior. These shifts, I suggest, imply a need for renewed empirical investigation of the role played by television-watching in family relationships and civic life.

Social Effects of Established Television Technologies

Over the past forty years, researchers from a broad range of disciplines – among them, public policy, law, business, family life dynamics, and communication and media studies – have developed a substantial body of analysis on the social dynamics of standard modes of television viewing. Within this literature, I will highlight three themes that provide a comparative baseline for assessing later streaming television technologies: (1) the homebound nature of standard television viewing, (2) the micro-social dynamics of the viewing area, and (3) the role of television in collective social experience.

The Homebound Nature of Standard Television Viewing

Political scientist Robert Putnam notes in *Bowling Alone* that the "single most important consequence of the television revolution has been to bring us home" (Putnam 2000, 223). And although Putnam cites that fact as an illustration of television's pernicious influence on American social life, this gravitation toward the home was actually an explicit *hope* of early television proponents. As media scholar Lynn Spigel notes in her account of the placement of the television in postwar family life, *Make Room for TV*, advertisements from the 1940s and 1950s

> suggested that television would serve as a catalyst for the return to a world of domestic love and affection—a world that must have been quite different from the actual experiences of returning GIs and their new families in the chaotic years of readjustment to civilian life (Spigel 1992, 41).

Pulling the family back home again was seen as a way in which the television could help ameliorate the social and familial disruptions of the postwar era – acting as a kind of familial glue. And as Spigel goes on to note, studies on the social effects of television in the same period tended to support this view: individuals interviewed for such studies generally "believed television strengthened family ties," asserting that "It keeps us together more," and "It makes a closer family circle" (Spigel 1992, 44).

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[2] ABC FEP: http://abc.go.com/player/; Hulu: http://www.hulu.com/

Still, over the years, normative judgments of the home-based nature of television watching in the literature grew decidedly more negative: where initially television's pull toward the home was primarily extolled as a virtuous reinforcement of family ties, many scholars now decry that pull as an insidious drain on community ties, as well as a troubling sign for family life itself (e.g., Bianchi and Robinson 1997; Fabes, et al. 1989; Putnam 2000; Rue 1974). In a 1976 study of television and the family, for example, Vincent Rue cites a plethora of family life studies that have suggested a negative relationship between the time families spend in front of the television and the time they spend either conversing with one another or engaging in out-of-the-home activities together (Rue 1974, 73-74). Taking such assessments a step further, Putnam blames the rise of television for a half-century's worth of decline in civic participation, citing the same pull toward the home that the technology's early proponents so admired. After all, he contends, if we spend all our evenings *in*, by definition, we cannot also spend them *out*, at the baseball park, or the dance hall, or the bowling alley (Putnam 2000, 217, 37-8). In keeping with this assessment, Putnam thus asserts that "television privatizes leisure time," that it does so more efficiently than any previous mass cultural form ever invented, and that this privatization is highly destructive to social and civic life (Putnam 2000, 236).

Putnam's *causative* claim – that television lies at the root of the decline in American civic life over the past fifty years – has rightly been the topic of much debate since he first introduced the argument in 1995 (Putnam 1995; Shah 1998; Uslaner 1998). However, the underlying *correlation* that frames that claim – the co-occurrence of increasing television viewing and decreasing engagement in face-to-face interactive activities (Putnam 2000, 234-35) – remains valuable to keep in mind in considering the potential impacts of innovative viewing technologies. Television may or may not be causing the death of civic engagement. Indeed, given the explosion in the interactive Web, the elaboration of complex online communities, and the rise of super-engaged sociopolitical phenomena like the 2008 presidential election, it seems suspect to claim that civic engagement is even uniformly on the decline. Still, to the extent that standard television technologies are tethered to the home, and to the extent that our voracious television consumption habits keep us there with them, they undeniably play a role in shaping social behavior. It is thus interesting to consider how changing television technologies might alter the home-centric-ness of viewing, and how such alterations might affect the social geography of everyday life.

The Micro-Social Dynamics of the Viewing Area

On the micro level of the living room, the spatial arrangements of standard television viewing have not changed very much over the course of the technology's history. From the very beginning, the dominant design metaphor for rooms with televisions has been a theatrical one: seating faces the screen, viewers look ahead and not at one another, and the whole arrangement entails a minimum of movement (of either the seats or their occupants) in order to watch (Spigel 1992, 108). Most innovations in viewing technologies have done little to change these arrangements: VCRs and DVRs reduce the need to live by the networks' schedule of programs, but do little to alter spatial configurations, while remote control devices serve only to cement existing spatial dynamics, by removing the need to get up and cross the room to tinker with the set.

As television-watching has become an increasingly prevalent use of leisure time, family-life researchers have discerned a number of ways in which these television-viewing spatial structures affect social interactions within the household. For example, the parallel-focused viewing space can create a nonthreatening context for family intimacy, especially among males. As Hopkins and Mullis explain,

> By focusing primary attention on the television, a simultaneous activity involving interaction can take place with the other co-viewers. Touching is acceptable under these circumstances, while otherwise it may not be. While this effect is noticeable for both sexes, females in our culture have available many additional ways to experience intimacy. Therefore, television co-viewing may fill a different set of psychic needs for members of each sex (Hopkins and Mullis 1985, 180).

Furthermore, similar intimacy-related phenomena sometimes occur in the early stages of romantic relationships, where the television viewing space can provide a depersonalized setting in which to build comfort with the partner. As one participant in Alexis Walker's 1996 study on remote control use in couples points out,

> TV watching was something we could do when we didn't know each other very well yet. You know, it was kind of like a sort of a neutral or a little bit less personal activity that we could sit and watch TV together as a shared activity. And it's still a shared activity (Walker 1996, 819).

The traditional television viewing space affords the possibility of enhancing familial or romantic relationships by creating a relatively benign venue in which to share experience and establish physical closeness – activities which in other contexts would be uncomfortable or even taboo. Though the parallel structure of viewing may decrease in-depth interaction in the short term, then, the very superficiality it encourages can allow individuals the opportunity to work towards greater intimacy in the long term.

Still, the observed micro-social impacts of television co-watching are not purely positive. For one thing, watching television together can cause couples to act out potentially problematic gendered power relations. In the same study of remote control use cited above, Walker concludes that "when heterosexual couples watch television together, men dominate in program selection and in the use of the RCD [remote control device]" (1996, 820) – and furthermore, that such viewing dynamics provide a venue for the exercise of male power over women. While the heterosexual men in Walkers study were essentially able to watch "what they want, when they want," the women "[struggled] to get their male partners to watch a program they want to watch," and were far more likely to "watch a preferred show on a different television set or videotape it so that they [could] watch it later," thus subordinating their preferences and desires to those of their partner in a highly gender-normative fashion (Walker 1996, 820).

The structure of the television viewing space is altered to greater or lesser extents by different streaming viewing technologies; thus, it will be important to consider how such alterations might differentially affect the relationship between television viewing and intimacy, as well as the kinds of gender dynamics that play out in the viewing space.

The Role of the Television in Collective Social Experience

Finally, the practice of watching broadcast or cable television has an impact on the macro scale as well as the micro, in the sense that it creates a basis for common cultural experience. Broadcast channels, by definition, transmit the same information at more or less the same time throughout a broad geographic area, and thus provide a shared set of cultural referents to the massive percentage of the population that watches. Indeed, even Putnam concedes that in particular situations,

> television…can sometimes reinforce a wider sense of community by communicating a common experience to the entire nation. . . . Television at its civic best can be a gathering place, a powerful force for bridging social differences, nurturing solidarity, and communicating essential civic information (Putnam 2000, 243).

Television can strengthen community by providing a basis for shared understanding, especially when it is playing an informative role, through news or educational programming (Putnam 2000, 243; Shah 1998, 475-76). Still, even programming with no explicit educational or informative goal may effect pro-social impacts: to the extent that it provides fodder for social discourse and personal introspection, even sitcoms, soap operas, or reality shows might play into the construction of shared experience and identity. As communication and political psychology scholar Dhavan Shah asserts, consumption of a broad range of common media can help individuals to "reinforce personal values, or gain insight into themselves and their surroundings….[or to] achieve social

empathy and a sense of belonging, find a basis for conversation and social interaction, carry out social roles, or connect with family, friends, and society" (Shah 1998, 475).

A second important macro-social affordance of broadcast media lies in its facilitation of serendipitous information encounters, which legal scholar Cass Sunstein suggests are fundamental to sustaining a functional system of free expression. As he puts it,

> people should be exposed to materials that they would not have chosen in advance. Unplanned, unanticipated encounters are central to democracy itself. Such encounters often involve topics and points of view that people have not sought out and perhaps find quite irritating. They are important partly to ensure against fragmentation and extremism, which are predictable outcomes of any situation in which like-minded people speak only with themselves (Sunstein 2001, 8-9).

It follows from Sunstein's assertions that although some of the information relayed by television and other broadcast media may annoy us, challenge us, or simply bore us, it is important that we are at least afforded the opportunity to be so annoyed, challenged, or bored. Such serendipitous questioning of our assumptions, Sunstein claims, keeps societies from devolving into factions; a set of parallel echo-chambers in which individuals never have to deal with or even encounter views that challenge their own (Sunstein 2007). Flicking around television channels, like flipping through the pages of a magazine or newspaper, affords not only the genesis of common experiences and fodder for social discourse noted above, but also the opportunity for these serendipitous encounters with conflicting perspectives that challenge us to elaborate upon or alter our own views. To the extent that streaming television interfaces reshape or remove these opportunities, they have the capacity to affect civic and social life in ways that are normatively ambiguous at best.

Potential Social Impacts of Streaming Television Technologies

The remainder of this analysis will draw on examples from two representative streaming television interfaces: the ABC Full Episode Player (ABC FEP) and Hulu. Before delving into these examples, I will provide a bit more detail about the bases for their selection.

First, both services bear certain broad similarities to broadcast that will help limit the number of variables present in the comparison. In particular, both the ABC FEP and Hulu are run by one or more of the "big four" American television networks: ABC FEP by ABC, Hulu by NBC and Fox. And further, both utilize a free-to-the-viewer, advertising-supported revenue model similar to broadcast, in which a single, non-skippable 30-second commercial is inserted at 3-5 points during each 42-minute program. These continuities of network and revenue model will help to reduce

the confounds present when comparing the social affordances of streaming television to those identified for broadcast.

Second, within the overarching category of free, ad-supported, network-based streaming, these two services, respectively, represent highly developed instantiations of the two basic online streaming models currently in use: the ABC FEP the dedicated, single-network video player, and Hulu the aggregator/syndicator of programming from multiple sources.

In 2006, the ABC FEP was the first online streaming service to achieve widespread adoption, presaging similar single-network players later offered by the CW, the Discovery Channel, and NBC, among others. Within the FEP, the viewer can select a show, and then an episode within that show, which will then play in full; this is the only mode of navigation enabled. As a recent *PC World* review notes, the ABC player still remains an industry leader in quality and usability (Perenson 2008, 110), and it is the most popular single-network streaming video player among 18-24-year-old women (Fox leads among the same age group in men) (Vorhaus 2008). Further, the FEP represents the "walled garden" vision of online television: even where other sites claim to "provide" ABC content, all they are allowed to provide is a link back to the FEP (Dana and Steel 2008; Gannes 2008). Other networks have tended to be more liberal about allowing aggregation of the content they provide through dedicated players on other sites; however, the restricted vision of streaming that ABC pioneered and continues to follow forms an especially interesting contrast to the extremely open strategy followed by Hulu.

Hulu, which combines programming from 110 networks and other providers, and allows these programs to be embedded elsewhere on the web, has been called the "gold standard" of online television aggregation, easily surpassing other network-supported offerings such as TV.com, Joost, and FanCast[3] in both viewers and pure slickness (Gannes 2008; Kilar 2009; MacMillan 2009; Perenson 2008). Hulu represents a later addition to the field, going live in April 2008. However, as noted earlier, it soon became one of the most popular video streaming sites on the web. One reason often cited for Hulu's explosive growth in popularity is its unparalleled combination of power (particularly of its video player) and ease of use (particularly of its search, browse, and recommendation features) (Kirkpatrick and Lashinsky 2008). Hulu allows users to search or browse for shows in a wide variety of ways; add episodes or series to a personalized "queue;" rate,

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[3] The CW: http://www.cwtv.com/cw-video; the Discovery Channel: http://dsc.discovery.com/videos/; NBC: http://www.nbc.com/Video/library/full-episodes/; TV.com: http://www.tv.com/, Joost: http://www.joost.com; FanCast: http://www.fancast.com/.

review, and discuss programs; and share programs or clips by embedding them on websites, emailing direct links, or posting them to any of a variety of social networking sites.

These two models – dedicated players and aggregator/syndicators – represent very different perspectives on user experience, and are thus both well worth including in considering the social affordances of streaming television; restricting the analysis to an especially established and popular example on each side will help to prevent redundancy and tedium.

The Spatiotemporal Ambiguity of Streaming

One of the most radical ways in which streaming services alter the experience of television lies in untethering that experience from the living room.[4] Unlike broadcast, streamed programs are not bound to a stationary piece of machinery: with a laptop, or, increasingly, a mobile device like a Smartphone, you can watch wherever you want, as long as you've got a high-speed Internet connection. And though the possibility of watching downloaded or digitized episodes on such devices – or a DVR like the TiVo – has existed for some time, streaming reduces the mental overhead involved, as it does not require any pre-planning: you decide you want to watch, and as long as you're connected, you can do it right that second, even if the show you want to see aired last week and you never set the TiVo. This flexibility increases convenience, allows for the infiltration of previously off-limits contexts, and removes the felt necessity to watch a certain program at a certain time in a certain place. Intriguingly, moving television out of the living room holds the potential to enable social phenomena equal in normative ambiguity to television's previous homeboundness; in what follows, I will suggest some of the positive possibilities, followed by some of the negative.

First, the positive. It is possible that divorcing television programming from time and space might reduce whatever sense of being a "slave to the program schedule" still remains (particularly among those lacking a DVR), and might thus encourage TV-watchers to make space during "prime time" for other, more social activities. Sites like the ABC FEP and Hulu make it possible for fans of particular shows to watch the latest episodes of those shows any time within a given period after the show airs,[5] without requiring even the minimal mental overhead of remembering to set the VCR or the TiVo, or the financial cost of paying for the download (from, for example, Amazon or

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[4] Obviously, portable televisions exist. However, it seems reasonable to exclude them from this analysis on the basis that they have never really caught on as a widespread consumer phenomenon – at least not nearly to the extent that conventional televisions, laptop computers, or Smartphones have.

[5] This period varies based on a somewhat obscure number of factors. In general, ABC keeps the last five episodes aired live on its site (even when some of those episodes are repeats); Hulu's sunset periods are much more variable, with some episodes disappearing within days or weeks, while some episodes possess no expiration date at all.

iTunes) or, for that matter, the TiVo subscription itself. It is at least plausible (if not necessarily *likely*) that the convenient availability of streaming for a large percentage of network television programming might encourage the self-professed "homebodies" that worry Putnam so much (2000, 237-8) to make more spontaneous use of their leisure time: if something interesting comes up on a night when a favorite program is on – say, a happy hour or some sort of public lecture – not having set the TiVo or the VCR will no longer be an excuse to miss out on that event. Though it is far from clear that this sort of situation would arise with any frequency, streaming at least affords that possibility, and thus may erode the extent to which television schedules provide a persuasive rationale for missing out on social life.

Still, the liberating convenience the services provide must be balanced against the abusive practices their ubiquity could enable. That is, at least some viewers will undoubtedly use the always-available streaming services to simply watch *more* television than they did already. After all, streaming enables individuals to watch not only at home, but at the office, at class, at the computer lab, and at the coffee shop. And indeed, early indicators suggest that such an additive effect may be much more prevalent than a more directly substitutive one: a recent industry report found that though "11% of online video viewers say they watch less TV now that they are watching online video on their computers," in general, "online TV viewing is accretive, not cannibalizing" (Vorhaus 2008) – that is, so far, online TV simply means *more* TV. To the extent that online viewing *is* essentially accretive, it may simply, to paraphrase Putnam, privatize even *more* of our leisure time – and beyond that, it may begin to encroach upon time where we would normally be (or even *ought* to be) working, listening, thinking, or interacting with others. Indeed, the solitary, furtive viewing likely to occur in settings like the office or the classroom would completely divorce the television-viewing experience from the early pro-family ideals noted by Spigel. Though families and other groupings will likely still be inclined gather around the television – whether the content is broadcast or streaming – the affordances of online viewing enable the transplantation of television into contexts in which such gatherings are impossible, impractical, or simply unlikely.

The Micro-Social Dynamics of the Streaming Viewing Area

A consideration of the second theme – the micro-social implications of the streaming television viewing space – will draw more centrally on the specific affordances and constraints of the two example services. As it happens, the social affordances of the two sites radically differ: while the ABC FEP explicitly supports a more solitary, close-to-the-computer viewing experience, Hulu allows for a viewing experience much more analogous to standard television.

Two structural elements of the ABC FEP interface – the need to click a button every fifteen

minutes to keep watching, and the large number of clicks required to move from one episode to another, especially between different programs – do the most to alter the experience of viewing television through the FEP. In its default configuration, the service asks the user to "Click Here to Continue" at the end of each commercial break – as *PC World*'s online-TV reviewer wryly adds, "in case [one wants] to stare at the end screen of an ad indefinitely, I guess" (Perenson 2008, 110).[6] Less constantly obtrusive, though arguably equally antisocially designed, is the FEP's means of navigation between programs: by my count, it requires seven clicks, minimum, to move from an episode of one program to an episode of another.[7] And beyond this, there is no way of knowing in advance whether or not there will be a new episode up to watch once you navigate into the page for a particular show – so in a week with lots of repeats, that number of clicks might expand considerably.

These elements of the ABC interface – in contrast to the explicit group orientation of standard TV sets – structurally enforce solitude. And interestingly, this structural agenda is not accidental, but reflects the fundamental image of online viewing and viewers expressed by ABC itself: in 2008, report published by a group of ABC executives in *The Journal of Advertising Research* asserted that

> the online medium itself differs from TV in its 'lean forward' orientation. Just over 9 in 10 viewers (91 percent) report that they are watching ABC shows online by themselves, and nearly half are watching on a laptop computer (48 percent). This means most viewers are watching with no one else in the room to distract them, and many are watching on a relatively small screen at close distance (Loughney, et al. 2008, 321).

This assertion begs an essential question of causation. While the ABC report assumes that a "lean forward" orientation is a fundamental quality of the online medium, I would contend that this orientation is more likely a self-fulfilling prophecy: trying to watch the ABC service as one would a television set – sitting six or seven feet away on the couch, potentially with others – is a very irritating experience, requiring one to repeatedly get up and turn off the commercials, and to spend a few minutes between each show up of the couch again, fiddling with the interface in order to get the next episode to play. Given that, it seems unsurprising that ABC's viewers choose to

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[6] More recently, ABC has added an option in the FEP's "Settings" pane that allows the viewer to choose to continue the program automatically after commercial breaks. However, given that this option is extremely well-hidden (the link to the Settings pane is both tiny and far away from the main navigation on the page), and has not apparently even been noticed by other analysts who have written about the service in recent months, I will base my assessment of the player on its default settings, in which one has to click.

[7] (1) Click out of the episode, (2) click out to the home menu page, (3) scroll to find next program (requires clicking because the scroll-wheel is disabled), (4) click on next program, (5) click on episode, (6) click to select Standard vs. HD, wait through initial 15-second commercial, then (7) click again to start the show.

simply skip the hassle and watch alone at their computers.

By contrast, the Hulu interface much more directly replicates the affordances of the standard television viewing space, centrally through its "queue" function. On Hulu, signed-in users can add programs to their queue, either as individual episodes or as a subscription to a series (subscriptions populate the queue automatically as the relevant networks release new episodes). Once items have been added to the queue, they automatically play directly through, one after the other, with no action required on the part of the viewer beyond clicking "Play" on the first item. Given this interface, the only potential restriction Hulu might place on watching from the couch relates to monitor size: if you only have a small computer screen, and don't have the means to hook your computer up to your television set, even Hulu's full-screen option (also offered by the ABC FEP) might be difficult to see.

Considering these interfaces in terms of the observed micro-social effects of television described earlier, it is clear that designs like ABC's would more substantially affect the dynamics of the space than Hulu's; however, both would have some impact. As noted earlier, television co-watching can provide a nonthreatening context for building intimacy between partners or family members. Hulu's interface does not significantly shift this dynamic in and of itself: particularly when the computer is connected to a television or other easily-visible screen, there is nothing to prevent pairs or groups of people from cuddling up on the couch and watching together, which would allow for exactly the social dynamics described by Hopkins and Mullis. ABC's interface, by contrast, would tend to promote a more fractured, jumpy social experience, since one viewer or another would have to, at the very least, reach for the mouse and click "Continue" every 15 minutes – and if the computer is connected to a screen across the room, they would have to get up and cross the room to do so.

In terms of the gender dynamics underlying program choice and remote control operation described by Walker, the streaming interfaces might effect at least two sorts of changes. First, neither Hulu nor the ABC FEP affords the use of a remote control for switching between channels and programs.[8] Thus, several of the gendered behaviors Walker describes – notably "grazing" and "zapping," in which a (typically male) viewer uses a remote control to flick through several channels in succession or switch to another program during commercials, respectively (Walker 1996, 814) – are structurally negated. In this sense, the experience of viewing through the ABC FEP or Hulu may provide women with less fodder for irritation with their male partners, since

[8] Add-on software like Boxee is beginning to provide this functionality; however, such software remains alpha testing (which means it is still very buggy), and has not yet been broadly adopted.

those partners will be considerably less able to flick around during any given program (Walker 1996, 817).

However, in another sense, the services might merely exacerbate the gendered power dynamics program selection, by simply providing another, less flexible venue in which men can dominate the choice of what to watch. One of the ways in which Walker found that heterosexual couples handled disagreements over program selection was to watch the female partner's program choice during the commercial breaks of the male's chosen program (Walker 1996, 818-19). Between the lack of remote control, the non-skippability of the streaming services' commercials, and the dissociation of streaming programming from any system of "channels" one might "flick," such a compromise becomes all but impossible when using such services. Indeed, it seems quite possible that streaming services will only further enable the current gendered dynamics of program selection in couples by providing another secondary venue in which the partner who loses the fight over what to watch on the regular TV can watch their programs, just as second televisions and time-shifting have been used previously (Walker 1996, 820).[9]

Selectivity and Bias in Streaming Program Choice

The third and final way in which I will note that current streaming services change the social experience of television arises from the ways in which they encourage selective viewing over habitual or passive viewing. Putnam defines selective viewers as "those who turn on the television only to see a specific program and turn it off when they're not watching," and habitual viewers as "those who turn the TV on without regard to what's on and leave it on in the background" (Putnam 2000, 224). Habitual viewing as a practice relies on the undemanding nature of broadcast television technology – once you turn the TV on, the shows will just keep coming, regardless of what you do, until you turn it off again; you don't even have to consciously choose what to watch. Hulu only partially alters this pattern: it will keep playing without the viewer doing anything, but only so long as there are items in the queue – so, at some point, one does have to proactively go and find items or series with which to repopulate the queue. The ABC FEP, however, takes selective viewing several steps further: as noted earlier, not only does the viewer have to make a semi-conscious decision to continue watching every fifteen minutes, when they must click to return from the advertising, but they must engage in a relatively onerous quantity of

[9] Intriguingly, there is some support for this hypothesis in the ABC report cited earlier (though I would stop far short of claiming that it actually proves anything), which notes that, "while all of the ABC programs have a pronounced female audience skew on TV, the audience for the FEP offerings is even more female-dominated" (Loughney, et al. 2008, 324) – that is, a proportionally much higher number of women watches ABC shows online than watches on TV. Again, interesting, but hardly probative.

navigation in order to keep the episodes coming. Where broadcast, and to a certain extent Hulu, present an opt-out viewing model once they're on, ABC asks the viewer to repeatedly – even incessantly – opt in.

In at least one sense, an increase in selectivity – to whatever extent it occurs – could represent a pro-social shift in the effect of television on social behavior. Putnam notes that selective viewers, in general, are "significantly more engaged in community life than habitual viewers" (Putnam 2000, 224). And to the extent that streaming interfaces structurally encourage frequent deliberative thought about whether or not to keep the programming going, they also encourage selective viewing – ask enough times, and eventually the answer will be "off" – and so may help to increase the ranks of these statistically-more-likely-to-participate individuals (although the question of cause and effect, as noted earlier, remains open). Particularly for viewers who adopt streaming as their primary viewing option, this encouragement of selectivity may have the potential to diminish some of television's purportedly negative impact on civic engagement.

However, there is a flipside to selective viewing: it may tend to fragment collective experience, as each individual chooses to engage only with programming they have explicitly sought out themselves, thus missing out on serendipitous contact with messages they would not have thought to choose. One particularly damaging loss in this vein lies in the exclusion from streaming sites of news breaks and other timely content from the viewing experience: as Putnam suggests, particularly at moments of national or global tragedy, like the September 11 attacks, the Indian Ocean tsunami, or Hurricane Katrina, television can communicate "a common experience to the entire nation" (Putnam 2000, 243). Further, on a local level, neither Hulu nor ABC.com apparently supports the provision of emergency weather information or other alerts that automatically appear on broadcast television – information that one would not necessarily know to look for until a weather emergency had already begun to occur (at which point the power might be out). Because it exists as a purely on-demand service, streaming television lacks the ability to assume these unique pro-social capabilities of its broadcast ancestor.

Moreover, it is worth considering whether, as Sunstein suggests, being able to pick and choose everything we see might limit our exposure to – and thus our ability to understand – viewpoints different from our own. Even beyond the imposed deafness to breaking news and alerts noted above, by forcing you to explicitly choose each and every program you watch, current streaming television sites make it considerably less likely that you will happen across something that irritates or angers you, like an inflammatory Fox News show, or a particularly irksome episode of Dr. Phil. On ABC's FEP and Hulu, you don't have to see or hear anything you disagree with or don't like if

you don't want to, even in passing; you find what you choose to find, no more and no less. Moreover, on dedicated single-network players like ABC's, that selection is quite narrow, restricted to only what that network sees fit (and is contractually allowed) to provide in that format – for ABC, mostly daytime or evening soaps, plus a few reality shows and news programs. On syndicator/aggregator sites like Hulu, the selection is considerably broader – everything from classic episodes of *Alfred Hitchcock Presents* to the latest installment of *Fox News Sunday* – indeed, it is broad enough that Hulu is currently testing out a recommendation system that will suggest shows based on other things you've watched. And yet, a broad selection filtered through recommender systems, somewhat perversely, tends to reinforce the existing biases of the viewer, by pushing more things similar to what they have already selected into their line of sight. Though the currently limited scope of programming available on even the most extensive streaming sites renders such biases relatively benign in the short term – Hulu, for example, is as yet unlikely to be anyone's sole source of information – as such personalized services grow more central to our media experiences – and particularly should they supplant our current primary source of information, the television – they will enable a much higher degree of social fragmentation over the longer term.

Conclusion

"Watching TV" continues to dominate American leisure time – but the definition of that phrase is changing. Though to this point, streaming television has acted more as a supplement to than a replacement for broadcast or cable viewing, that situation could easily change, especially as streaming services advance in both technological sophistication and content variety. Indeed, some in the media have already begun to forecast the death of broadcast television, as some viewers begin to cancel their cable subscriptions, satisfied with the content they can find on sites like Hulu and the network sites (Grossman 2008; Rosen, et al. 2009). Such predictions seem somewhat premature, given that, among other things, there remains an enormous access gap between television and broadband in the United States.[10] Nevertheless, they help to indicate the increasing disconnect between the experience of "watching TV" and the actual television set itself.

In this analysis, I have highlighted three ways in which this disconnect, to the extent it is effected by streaming services like the ABC FEP and Hulu, might alter the existing social context of television watching: by weakening the link between television watching and the home; by changing the micro-social dynamics of co-watching, and in some cases discouraging co-watching in general; and by increasing the required intentionality of program selection. I have also speculated on the

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[10] As of 2008, at least 95% of the population watched television, while only 73% used the Internet, and only 55% had a broadband connection at home (Horrigan 2008, 3, 12; Nielsen 2009, 1).

implications that these three shifts might have for the social dynamics of the viewing space. First, I have argued that the severing of television's connection from the home and from the broadcast schedule may liberate viewers to reorganize their time in more social ways – but it may also simply allow them to increase their viewing, and push it into less appropriate contexts like the office or the classroom. Second, I note that the need to exert more effort to continue watching may discourage individuals from watching together, and may thus imperil one low-risk avenue for building intimacy between male family members or within new romantic relationships. And further, I suggest that the removal of the ability to "channel surf" on current streaming sites may reduce tensions in heterosexual couples caused by men's tendency to "graze," but may also further enable male domination of program selection. And finally, I posit that streaming television may fracture or even factionalize social experience, to the extent that it removes both the collective experience of simultaneous programming (most troublingly including breaking news and local alerts) and the serendipitous discovery of content that one might not explicitly select (especially that which challenges one's perspectives or beliefs).

Still, this analysis remains incomplete, in at least three ways. First, some of the most striking social impacts that streaming television might effect will not be discoverable through a direct comparison to the impacts observed for standard television, because the phenomena they represent are fundamentally *new* to the television context. For example, Hulu, CBS.com, and others are increasingly incorporating two-way communication into their streaming television interfaces, allowing viewers to comment on and review programs, or even discuss them in real time, as they watch the show. This type of affordance fundamentally alters the directionality of the medium: though communication of programming remains one-to-many, discussions allow for many-to-many communication among fans, and reviews and feedback for many-to-one communications from fans back to producers, all within the same interface. The impacts of the increasing hypertextuality and interactivity of the medium are simply not directly anticipated by prior literature on the television social sphere, and it would thus be difficult to offer a parallel comparative assessment that accounts for them.

A second important factor that remains largely absent from this analysis relates to the flip-side of technology use: that is, its *design*. As briefly indicated within the discussion of ABC's perceptions of the viewer, the design of streaming services does not happen by accident; rather, it follows from a particular set of assumptions held by those responsible for the design. Will viewers want to watch alone or together? Will they want to embed the content on their Facebook page? Will they want to browse, search, or both, and in how many ways will they want to do these things? As historian Thomas Hughes has suggested, technological systems "are both socially constructed and

society shaping;" a set of biases and assumptions is inscribed in the design of each technology, and those assumptions shape the affordances and constraints that define its potential usage. This analysis has focused on one pole of this dichotomy to the exclusion of the other, but that exclusion is not intended to diminish the importance of examining the opposite side; if anything, it serves to emphasize the necessity of such an examination.

A final weakness of this analysis – its speculative nature – may in some ways be more a feature than a bug. Streaming technologies are still relatively new, and have thus not been the focus of much – if any – empirical research. Thus, many of the conclusions I draw in the foregoing analysis of the technology rely to a great extent upon my own experiences with and opinions about the streaming television options that are out there. This renders those conclusions highly subjective, and others might easily disagree with them. However, fostering such dispute – or at least the *interest* that underlies dispute – has been one of my goals in offering up these speculations in the first place. Though other researchers may not share my particular hypotheses for what the impacts of streaming television technologies will actually be, I hope I have at least shown that some sort of social impact is likely to occur, and thus the phenomenon deserves further examination.

No technology is socially neutral – especially not communication technologies. As Meyrowitz notes, electronic technologies of communication

> affect social behavior…by reorganizing the social settings in which people interact…[and the] introduction and widespread use of a *new* medium of communication may restructure a broad range of situations and require new sets of social performances (Meyrowitz 1985, ix, 39, emphasis added).

It is thus the responsibility of researchers interested in describing, assessing, and perhaps effecting change in the social impacts of communication – whether in communication and media studies itself, or in affiliated fields like information science, public policy, and sociology – to interrogate the role of new technologies of communication in social life through rigorous empirical research. Because streaming television represents exactly such a technology, and because its impacts will be felt within a sphere of activity – watching TV – that dominates American leisure time, I contend that such services emphatically merit exactly this sort of interrogation.

Biographical Statement

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