Can’t See the Forest For the Trees? Media Multitasking Leads to Local Perceptual Processing and Concrete Construals in Subsequent Tasks

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We compared media multitasking to traditional, sequential media exposure. In Study 1, media multitasking led to more local processing during a subsequent geometric comparison task. In Study 2, behaviors were rated more concretely after multitasking with media. Study 3 confirmed that switching between different information streams likely drives these effects.

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EXTENDED ABSTRACT

A substantial proportion of media consumption today occurs simultaneously, a phenomenon termed media multitasking (Roberts & Foehr, 2008). However, over a century of dual-task interference research has demonstrated that the human ability to perform multiple tasks simultaneously is primarily limited to automatic, habitual behavior (Pashler, 1994). In serial processing contexts, frequent switching between tasks also implies significant processing costs (Monsell, 2003). Researchers have already established that this shift in media consumption behavior has detrimental effects on learning, memory, and cognitive information processing (Armstrong & Chung, 2000; Pool et al., 2003; Ophir, Nass, & Wagner, 2009; Lin, 2009; Cain & Mitroff, 2011). However, its potential effects on the way consumers attend to and process subsequent, unrelated information have not been explored. In three experiments, we compare multitasking to single media consumption contexts, providing an initial account of these carryover effects.

Action identification theory posits that difficult tasks require the action at hand to be encoded at a lower level of abstraction, where attention is highly focused on task details (Vallacher & Wegner, 1987). This notion that successful performance of challenging tasks is associated with a narrow attentional scope should hold for media multitasking contexts, where viewers' attention constantly shifts between complex, continuous streams of information. Furthermore, mindset switching has been shown to deplete self-regulatory resources (Hamilton et al., 2010; Rubinstein et al., 2001). In turn, self-regulatory depletion prompts a narrow scope of attention and cognition and a lower construal level that is carried over to subsequent tasks (Wan & Agrawal, 2010; Bruyneel & Dewitte, 2012).

Study 1: We test the hypothesis that a media multitasking context leads to more local perceptual processing (e.g. seeing trees rather than a forest) compared to a traditional, sequential media context. Participants were asked to browse a website on a portable computer and watch short animated films on a flat screen TV. In the control condition exposure was sequential, alternating the medium order between participants. In the multitasking condition the website and short films were presented simultaneously. In both conditions participants were instructed to pay as much attention as possible to both media. Level of perceptual processing was then measured by a geometric comparison task (Kimchi and Palmer, 1982) completed immediately after the media session. All multitasking sessions were recorded with an unobtrusive high-definition camera, allowing to count the number of visual switches between the two media.

As predicted, participants in the multitasking condition processed more locally compared to those in the control condition, relying more on the local elements rather than the global configuration when comparing geometric figures. Furthermore, the number of visual switches between media was negatively correlated with perceptual processing, indicating that it is the high fragmentation of the media context that leads to more local perceptual processing during a subsequent task.

Study 2. Strong evidence exists for a relationship between perceptual processes and higher-level conceptual processes ( Förster et al., 2008). Global processing facilitates tasks, which benefit from broad (abstract) mindsets, while local processing improves performance on tasks that benefit from narrow (concrete) mindsets. Study 2 explores if the carryover effect of media multitasking extends to construal levels as defined by Construal Level Theory (CLT; Trope & Liberman, 2010). The experimental design was similar to Study 1 but different media types were used: a newspaper article and a TV commercial block. Immediately after media exposure, construal levels were measured by the Behavior Identification Form (BIF; Vallacher & Wegner, 1989). Participants who read a newspaper article while watching TV commercials scored lower on the BIF compared to participants who only read the newspaper article, suggesting that a multitasking context induces a more narrow (concrete) mindset, which carries over to subsequent tasks.

Study 3. Switching frequency was negatively correlated with levels of perceptual processing in Study 1 but we found no relationship between switching frequency and construal levels measured in Study 2. In both studies switching frequency was measured by observing participants' head movements—a measure that cannot distinguish between visual attention switches and actual conceptual switches between content streams. In order to better distinguish between the role of visual vs. conceptual switching in driving the observed effect on construal levels, Study 3 compared a media multitasking context to a control condition that requires visual but not conceptual switching. In the conceptual switching condition participants watched two short films (an animated film and a sports documentary) simultaneously on two identical displays. In the control condition, participants saw the films sequentially but each film was shown on both displays (i.e. they were exposed to two identical video streams simultaneously). All participants were instructed to pay attention to both displays. Immediately after exposure, construal levels were measured by the BIF. In line with expectations, participants who switched between the two films construed behaviors more concretely compared to participants who visually shifted their attention between two identical streams of information (control condition).

Despite higher cognitive load reported in the multitasking compared to control conditions in all three studies, the observed effect on perceptual processing was not mediated by perceived cognitive load. Further analyses indicated no differences in mood and no media order effects on perceptual processing or construal levels.

Media multitasking behavior radically alters the context of media consumption. We have demonstrated that its fragmented nature, and especially the frequent switching between different information streams can lead to a more narrow attentional focus and a more concrete construal that carry over to subsequent tasks. Construal level has been studied in the context of various facets of consumer behavior: evaluating product attributes, making choices, exercising self-control etc. (Trope et al., 2007). The observed effects could have relevant implications for the affective and cognitive processing of media content and persuasive messages and, consequently, for media planning strategies (Pilotta et al., 2004; Voorveld, 2011). As media consumption habits continue to evolve, marketing and advertising practitioners could benefit from more experimental research on the contextual effects of media multitasking behavior.

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REFERENCES