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# THE JOHNS HOPKINS GUIDE TO DIGITAL MEDIA

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Edited by Marie-Laure Ryan, Lori Emerson,  
and Benjamin J. Robertson



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## Relations between Media

*Philipp Schweighauser*

In 1913 the German journalist and newspaper editor Wolfgang Riepl formulated what he considered "a fundamental law of the development of communication systems": "that the most simple means, forms, and methods are never fully and permanently displaced or put out of use by even the most perfect and most highly developed forms once they have become established and are found useful. But they may be compelled to search for other tasks and fields of use" (1913, 5). The example that Riepl gives in the footnote immediately following this passage is the use of the "ancient" medium of smoke signals to guide the Peruvian aviator Jorge Chávez's flight across the Simplon Pass in 1910. Riepl's account of the survival and refunctioning of older media under the pressure of new technological developments is not without its ideological impasses: his juxtaposition of "the most highly developed means, methods and forms of communication in civilized states [*Kulturstäaten*]" and "the most simple, primeval forms of various primitive peoples" (1913, 4) testifies to a primitivist evolutionism that we have learned to distrust. The empirical validity of Riepl's assertion has not gone unchallenged either: Werner Faulstich even asserts that "Riepl's Law" is "actually no law at all and simply wrong as a hypothesis" (2002, 159). Indeed, one would be hard-pressed to think of current uses of papyrus rolls, telegraphs, and floppy disks as media of communication. Smoke signals, too, have long disappeared from the world of aviation. Still, Riepl's contention helps us explain why television, CDS, and e-mail have not fully displaced the radio, vinyl records, and letters despite alarmist or celebratory announcements of their imminent demise. Riepl also helps us understand why the telephone has metamorphosed into the smartphone once it came under pressure from fully computerized forms of communication such as e-mail and online chat. More than that, half a century before Marshall McLuhan's first forages into media ecology in *The Gutenberg Galaxy: The Making of Typographic Man* (2000) and his influential assertion, in *Understanding Media: The Extensions of Man* (1964), that "the 'content' of any medium is always another medium" (1994, 8), Riepl invites us to think about the impact of new media on old media (see MEDIA ECOLOGY, OLD MEDIA / NEW MEDIA).

Yet one should be careful not to conflate Riepl's and McLuhan's interventions in media history. McLuhan develops what he calls a "cultural ecology" (2000, 35) to study not only how old media are forced to adapt their forms and functions under the pressure of new technologies but also how the "ratio and interplay among the senses" and thus "the very constitution of rationality" (2000, 13) change when new media are introduced. It was Neil Postman who coined the term "media ecology," which largely corresponds to McLuhan's "cultural ecology": "Media ecology looks into the matter of how media of communication affect human perception, understanding, feeling, and value; and how our interaction with media facilitates or impedes our chances of survival" (Postman 1970, 61). Unlike Postman and McLuhan, Riepl focuses primarily on the technological effects of new media and has no sustained interest in their psychological and cultural impact.

Further, Riepl contends that old media take on new functions and move into new operational fields when rivaled by new media, thus focusing on what Raymond Williams calls the “residual” elements of culture, i.e., that which “has been effectively formed in the past but is still active in the cultural process, not only and often not at all as an element of the past, but as an effective element of the present” (1977, 122). By way of contrast, McLuhan argues that new media “contain” older media in the sense that they preserve and rework forms and functions of older media (see MATERIALITY). Both challenge claims that new media simply displace old media, but while Riepl’s Law invites us to consider the effects of media competition on the old media themselves, McLuhan’s contention that “the content of writing is speech, just as the written word is the content of print, and print is the content of the telegraph” (1994, 8) asks us to focus on how old media “live on” in new media, thus ensuring a certain “biodiversity” in media culture. In the posthumously published *Laws of Media: The New Science* (1988), McLuhan and his son Eric conceptualize these processes by way of a tetrad that captures the four fundamental social and psychological effects of the media (enhancement, obsolescence, retrieval, reversal) as a unity of simultaneous and complementary actions. Based on this model, the McLuhans formulate four laws of media as a set of four questions that are taken to apply not only to media of communication but to all technologies encompassed by McLuhan’s very broad definition of media as “any extension of ourselves” (1994, 7):

1. What does the artifact enhance or intensify or make possible or accelerate? This can be asked concerning a wastebasket, a painting, a steamroller, or a zipper, as well as about a proposition in Euclid or a law of physics. It can be asked about any word or phrase in any language.
2. If some aspect of a situation is enlarged or enhanced, simultaneously the old condition or unenhanced situation is displaced thereby. What is pushed aside or obsoleted by the new “organ”?
3. What recurrence or retrieval of earlier actions and services is brought into play simultaneously by the new form? What older, previously obsoleted ground is brought back and inheres in the new form?
4. When pushed to the limits of its potential (another complementary action), the new form will tend to reverse what had been its original characteristics. What is the reversal potential of the new form? (1988, 98–99)

To ask these questions is “to draw attention to situations that are still in process, situations that are structuring new perception and shaping new environments, even while they are restructuring old ones” (1988, 116). In trying to answer them, the McLuhans hoped, media ecology would enable scholars to predict and, if necessary, correct the social and psychological effects of new media. On a more modest scale, the four laws of media also invite us to study the impact of new media on old media. The McLuhans themselves suggest this in their examples, which further emphasize the simultaneity and complementarity of the processes that make up the tetrad: “The photograph enhances pictorial realism and obsoletes portrait painting. The vacuum cleaner obsoletes the broom and the beater; the dryer pushes aside the clothes-line, and the washer the washboard and tub; the refrigerator replaces the icebox and the root cellar” (99–100). As is often the case with McLuhan, his customarily far-reaching claims need to be qualified: both portrait painting and the broom are still with us. More problematically, these examples of the complementary processes of enhancement and obsolescence are easily

amenable to the kind of “epochal” media history—to use another useful term by Williams (1977)—that both McLuhan and Riepl actually reject. The case is different with “retrieval” and “reversal.” Both notions serve McLuhan to counter teleological media histories that conceptualize changes in media ecologies exclusively in terms of the happy displacement of imperfect older media by more advanced new media. While reversal marks the technological, social, and physical limits of such progressivist histories, retrieval conceptualizes how old media “live on” in new media: “Money obsolesces barter, but retrieves potlatch in the form of conspicuous consumption. The digital watch displaces the old circular dial, and retrieves the sundial form, which likewise used light itself to tell the time and which also had no moving parts” (McLuhan and McLuhan 1988, 106).

Apart from McLuhan’s seminal assertion that “the ‘content’ of any medium is always another medium,” it is his reflections on retrieval that resonate most strongly in Jay David Bolter and Richard Grusin’s programmatically subtitled *Remediation: Understanding New Media* (1999) (see REMEDIATION). Bolter and Grusin agree with McLuhan that media history is not a progressive series of radical ruptures. Instead, every new medium “remediates” one or several older media, i.e., it “responds to, redeploys, competes with, and reforms other media” (1999, 55) rather than displacing them. Bolter and Grusin do the important work of updating some of McLuhan’s theorems for the study of digital media. Perhaps, though, their most pertinent intervention into media ecology concerns a notion that they only discuss in passing: “retrograde remediation,” i.e., the process by which “a newer medium is imitated and even absorbed by an older one” (1999, 147). Thus, tablet computers remediate smartphones, motion pictures enhanced with computer-generated imagery such as Christopher Nolan’s *Inception* (2010) remediate computer technology, and experimental book objects such as *McSweeney’s Quarterly Concern, Issue 16* (2005)—which contains a collection of short stories, a novella, a comb, and a set of cards with text by Robert Coover which generates a different narrative whenever the cards are shuffled anew—remediate digital hypertext (see HYPERTEXTUALITY). Including processes of retrograde remediation in their discussion allows Bolter and Grusin to update not only McLuhan’s studies of old media’s continuing presence within new media but also Riepl’s earlier reflections on the impact of new media on old media themselves. What is largely lost along the way, though, is McLuhan’s focus on the psychological and cultural effects of media change—a focus that Michael Giesecke develops further in his “historical media ecology,” which recognizes the necessity of multimedial, decentralized networks and synaesthetic information processing in the digital age while calling for the integration of all media and communicators, including both digital communication systems and human dialogue, in an “ecological equilibrium” (2002, 405–407).

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## Remediation

*Jay David Bolter*

*Remediation* as a term in media studies was defined by Jay David Bolter and Richard Grusin in their monograph of the same name, published in 1999. The term is meant to describe the complex relationships of rivalry and cooperation among forms and genres in a media economy (see **RELATIONS BETWEEN MEDIA**). Bolter and Grusin begin with the observation that new media forms do not simply spring into existence, but are instead outgrowths of technologies, techniques, and practices of older media. The medium of film, for example, grows out of a series of technologies of the moving image in the nineteenth century (such as the zoetrope, the phenakistoscope, and the zoopraxiscope). At the same time the techniques of filmic representation and the genres of film in the first decades of the twentieth century have antecedents in stage production and the novel. This relationship is universally acknowledged. However, under the influence of modernist aesthetics, media scholars and popular writers often assume that such relationships represent a beginning phase that is surpassed as the new medium or media form develops a language based on its own essential properties. Bolter and Grusin argue that these remediating relationships never end, even after the new medium has supposedly developed its own expressive forms. Newer and older media forms continue to borrow from one another as long as they remain part of a flourishing media economy. Remediation describes all the various relationships of cooperation and competition, rivalry and homage, and can involve form as well as content. Classic Hollywood film remediated nineteenth-century literature (e.g., the novels of Dickens, the Brontes, Hugo, and so on) by retelling their stories in the new visual medium. At the same time film borrowed and creatively refashioned the dramatic arc of earlier melodrama to create the standard so-called three-act film. Remediation need not be slavish borrowing; it can and often does involve creative and even radical refashioning.

Contemporary digital forms remediate a host of different forms from older media, which themselves remain important in today's media economy. The World Wide Web is a vigorous remediator. For example, news websites such as the *New York Times*'s *nytimes.com* remediate principally the printed version of the newspaper, while CNN's *cnn.com* remedies its own television networks. Web-based services (such as Hulu and Netflix) that stream television and film remediate these older media. Political blogs remediate the political pamphlet, the opinion pages of printed newspapers, and, with the addition of video, the politically oriented news channels and commentators. *Wikipedia* explicitly