CONTEXTUAL PRIMING EFFECTS IN THE RECEPTION AND EVALUATION OF NEWS EVENTS

BY

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DISSERTATION
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ABSTRACT

Juxtaposition is a complex phenomenon that exists abundantly in media messages, at least since early newspapers. Nevertheless, while many studies focus in the effects of news and while the research on context effects is broad, studies about context effects in news reception are scarce. A hypothesis proposed by media critics suggests that the juxtaposition of news –especially the mixing of tragic and trivial content– fosters trivialization. In the present thesis, I explore how the evaluation of news –in terms of importance, interest, and potential participation– changes when an event is presented without and with spatial juxtaposition, and in different priming conditions. An analysis of 2299 observations, in which 425 individuals participated in the evaluation of 60 pairs of news stories from three different content categories and importance levels, shows that there are significant contexts effects due to news juxtaposition. While there is a large trend toward assimilation, results show that –against criticisms– the combination of tragic and trivial news fosters contrast, whereas the combination of tragic with other tragic or serious news stories fosters assimilation. Experimental results are compared to a theoretical model to test its predictions regarding the effects of juxtaposition in the evaluation of stimuli.

Media not only affect the amount and kind of information that individuals get about events, but also how they cognitively represent them and the contextual stimuli with which they mentally compare them. Even when they have been overlooked in political communication research, news contexts, as proved in the present study, affect how individuals evaluate news events in terms of importance, interest, and their potential participation on them. Juxtaposition, hence, affects news perception and different contexts activate different mental representations that promote different interpretations and evaluations of news events. Context effects in news reception add evidence to the research finding that human evaluations are relative and vulnerable to media effects, since messages and their contexts affect the recency and frequency with which mental representations are activated.
To Miguel,

my whole universe.
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CHAPTER 1

INTRODUCTION:
THE JUXTAPOSITION OF NEWS MEDIA MESSAGES AND THE IMAGES IN OUR HEAD

"The headline of the Daily News today reads ‘BRUNETTE STABBED TO DEATH’. Underneath in lower-case letters: '6,000 Killed in Iranian Earthquake.' I wonder what color hair they had."¹

News media arrange news stories pertaining to a broad range of subjects and with widely varying importance in the same visual space, unaware of the effects of this juxtaposition on the interpretation and evaluation of news events and ignoring the mechanisms through which these effects take place. It is not uncommon to find news websites in which details of the personal life of celebrities, acts of man or nature that take many lives, political events, and advertisements share not only the same visual space but in many cases also format. As proved with other kinds of stimuli by psychologists and researchers from other disciplines, these juxtapositions could be altering the meaning and perceived importance of news items, possibly affecting individuals’ political reactions to the events covered. This is especially important in the case of human tragedies and catastrophes in which, if their perceived importance is reduced due to context effects, people’s participation such as donating money and/or supporting a bill or a policy could be affected.

This media practice—which exists at least since early newspapers—has been similarly recognized by a few authors as problematic, especially on news about disasters and catastrophes (see Berger, 1982; Postman, 1985). These authors claim that juxtaposition contributes to the flattening of news hierarchies (Postman, 1985; Nerone & Barnhurst, 2001) and that it ignores that “the meaning of an image is changed according to what one sees immediately beside it or what comes immediately after it” (Berger, 1982, p. 152). The general intuition of these authors is that the juxtaposition of news contributes to the trivialization of human suffering and pain. Despite these criticisms, political

¹Hoffman quoted in Tuchman (1978).
communication and media effects researchers have focused mostly on the amount of media coverage about events (agenda setting) and the way they are described (framing), overlooking the visual contexts in which news items are embedded, which are another possible source of media effects.

Priming and context effects research from psychology have found that the context in which a message or an object appears triggers certain expectations in individuals’ minds, affecting its meaning, comprehension, and recall rates\(^2\). The same has been found in advertising research where experimenters have found that the content of a program or a magazine significantly affects subjects’ liking, evaluation of, and cognitions about the advertisements embedded within it\(^3\). These findings suggest that the meaning and perceived importance of a news story, just as the meaning and evaluation of the stimuli tested in these studies, could be affected by its context. Recent analysis of the effects of juxtaposition of news and ads in news perception\(^4\) provide more evidence to predict that news stories influence the perception of adjacent news. Hence, it is reasonable to hypothesize that different news contexts provide different reference points to interpret and assign importance to a news event. The fact that humans are cognitive misers who usually do not take into account all possible elements in an evaluation task makes them vulnerable to news contexts and to the mental representations these might activate while processing a target news event, which can affect its comprehension, interpretation, and evaluation.

The present study investigates how individuals’ judgments of importance, interest, and their potential participation change when a news event is presented without and with a spatially adjacent news item and with different kinds of adjacent news items. This investigation becomes more urgent these days as homepages of news websites have reversed a decreasing juxtaposition trend reflected throughout newspaper layout history\(^5\), embedding news messages in more diverse and more saturated contexts than ever before. If news juxtaposition affects the evaluation and perception of events, then it would affect not only the kind of images individuals have about them, but also their political attitude toward them.

To measure context effects due to the spatial juxtaposition of news, sixty news items from three different content categories and three different importance levels were evaluated without and with spatial adjacent primes in terms of importance, interest, and potential participation. The same items

\(^2\) E.g., Bransford and Johnson (1973), Bugelski and Alampay (1961), Davenport and Potter (2004), Foss and Jenkins (1973), and Torralba and Sinha (2003), among others.


\(^5\) This is shown in Chapter VII.
were mixed in pairs and re-evaluated by a different set of participants. Results from 2299 observations (graded pairs of news stories) from 425 participants show significant context effects due to news juxtaposition. A news event is evaluated differently in terms of importance, interest, and potential participation when it is presented without or with a spatially adjacent news story, and this evaluation also changes depending on the content category of the two news stories that share the same spatial context. While the combination of some news content categories moved individuals’ judgments towards assimilation, others triggered contrast effects. The findings support a theory of context effects in the evaluation of news due to juxtaposition. Despite previous criticisms to the mixing of trivial and tragic news events, this was the combination with the lowest probability of assimilation and highest probability of contrast effects, which means that—generally—their differences in evaluation are larger when they appear spatially adjacent to each other than when they are separately evaluated. This finding opposes Berger’s and Postman’s intuition that the combination of tragic and trivial content causes trivialization.

Three main research areas are relevant to the study of the phenomenon of news juxtaposition: communication and cultural theory, priming and context effects research, and political communication and media effects. First, communication and cultural theorists explore the concept of juxtaposition and hypothesize about its possible consequences on the interpretation of messages. Some of these theorists analyze the juxtaposition of news and the non-neutrality of layout design in newspapers. In addition, communication historians provide information to analyzing how this phenomenon has evolved since early news media. Second, priming and context effects research, mostly from psychology and advertising, provide not only a theoretical framework for understanding the effects of juxtaposition at the cognitive level, but also the methodology to investigate them. Last but not least, political communication and media effects researchers study the way messages affect how individuals interpret events and how these interpretations are fostered by news media coverage, especially with the research paradigms of agenda setting, framing, media priming, and, more recently, with the analysis of the juxtaposition of news and ads.

These research areas appear in different sections of the thesis. While communication and cultural theorists, along with thinkers and authors from other disciplines, provide an initial framework to analyze the concept of juxtaposition, none of their definitions captures its multidimensionality. For this reason, Chapter II is devoted to analyze the different theoretical perspectives about juxtaposition, where I propose two types and three dimensions of the phenomenon useful for its analysis. The
literatures on priming and context effects appear throughout all thesis chapters. In Chapter III, I introduce the reader to the paradigms of priming and context effects, mainly from the perspective of psychology and advertising. Then, in Chapter IV, using previous models, findings, and theories from cognitive psychology, advertising, and political communication research, I propose a network model of contextual influence due to news juxtaposition. In these two chapters, I present theoretical explanations about these phenomena, highlighting previous experimental findings useful for deriving hypotheses for the study. In Chapter V, I describe the research design. In Chapter VI, I present and discuss the experiment’s findings in the light of the network model proposed in Chapter IV and of previous research in priming and context effects. Using the experimental results as a reference, Chapter VII focuses in the juxtaposition of news, where I provide a criticism to the widely accepted belief that news layout is a neutral conduit of content, and I theoretically analyze the evolution of news juxtaposition throughout newspaper history using as a framework the historical analysis of the form of news\(^6\) and the definition of juxtaposition previously presented in Chapter II. Finally, in Chapter VIII, I explain the relevance of media effects, in general, and of this study, in particular, on public opinion within the framework of normative theories of democratic communication. Then, I conclude in Chapter IX.

CHAPTER II

JUXTAPOSITION:
AN INTERDISCIPLINARY AND MULTIDIMENSIONAL CONCEPT

Juxtaposition has been defined, mostly indirectly, by a few authors from several disciplines such as Communication, Cultural Studies, Rhetoric, English, Arts, Sociology, and Theology, among others. However, none of the definitions captures the multidimensionality of the concept. In this chapter, I formulate a complete definition of the phenomenon of juxtaposition, which can be of two different types, temporal and spatial, and I divide it in three dimensions that analyze different aspects of the interaction between form and content: density, contrast, and resemblance. Previous ideas on juxtaposition from different disciplines help to enrich and clarify each type and dimension of the phenomenon and to hypothesize about its effects.

Derived from the Latin words *uixta*, which refers to ‘union’ or ‘join’, and *ponère*, which means ‘putting’,7 juxtaposition is, in its simplest meaning, the placement of one element in close proximity to another. Elements can be temporally juxtaposed, where each element follows another in a sequence, and spatially juxtaposed, where elements are related to each other for sharing the same physical space. These two kinds of juxtaposition are not mutually exclusive since they can take place in the same message. For instance, spatial juxtaposition can take place in images that form part of a sequence, like the superimposition of images in a film.

Saussure’s (1964) classification of the relationships among signs corresponds to these two kinds of juxtapositions. Though Saussure does not refer to the combination of signs as juxtaposition, he describes two opposite ways in which signs relate to each other when they appear together: syntagmatic and associative –later called by Barthes (1973) paradigmatic– relationships. Syntagmatic relations, which correspond to temporal juxtapositions, connect two or more consecutive units in a linear fashion, in which every sign obtains its value and meaning in opposition to the others. By contrast, associative or paradigmatic relations, which correspond to spatial juxtapositions, connect two or more signs in a simultaneous way. In this sense, temporal juxtapositions are obtained by sequential contiguity and adjacency. The influence among elements is unidirectional: the reader or viewer clearly perceives

7 Real Academia Española (RAE), 2012.
one element after another, so the order of the elements influences how the individual relates two successive signs or segments. Instead, in spatial juxtaposition, contiguity and adjacency have a more complex dimension than in temporal juxtaposition because the order in which elements are perceived at any given moment is controlled by the viewer not by the sequence. Therefore, the influence among elements is proposed but not determined by the message. Readers’ and viewers’ agency is also limited in spatial juxtapositions, since –be it for nature or nurture– human eyes follow a somewhat predictable pattern when reading and watching visual messages as proved by eye-tracking studies\(^8\).

Temporal juxtapositions can be the product of editing choices in the making of messages and their arrangement in a sequence in which the receiver has no direct agency –as in media flows composed of successive elements like radio, television, videos, or temporal montages in film (Manovich, 2000). However, temporal juxtaposition can also be a random consequence of audience members’ activities –as when changing channels and surfing the web. In many cases, temporal juxtapositions are a mix of these two types like when editors propose the order of a sequence of messages but the receiver controls the pace and the order of the flow –as links in hypertexts, the arrangement of pages in newspapers and magazines, or even in video websites.

Regarding the making and arrangement of messages, a few cultural studies and communication scholars, following a trend started by Williams (1974), study the temporal juxtaposition of audiovisual material in television, to which they refer as flows. In his classic study on television, Williams critically analyzes the uninterrupted flow of commercials and content as a cultural form that characterizes television programming. Every new edition of audiovisual material constitutes a new flow, which results in a different temporal juxtaposition of elements suggesting new relationships among them. These flows tend to blur contents together so that the viewer can tune from one program to the next effortlessly (Adler, 1976). Postman (1985) observes that, regardless the gravity of the events reported, the news is followed by less important stories and advertisements that might neutralize its value and meaning. He also criticizes the news programs’ use of phrases like “Now...this”, indicating “that what one has just heard or seen has no relevance to what one is about to hear or see” (1985, p. 99). Some authors consider that these flows often have ‘hidden messages’ suggested by the different juxtapositions of audiovisual material\(^9\). These hidden messages, though possibly not intentional or planned, can contradict, contrast, or complement the message of the primary content, or even suggest new meanings.

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\(^8\) See Holmqvist and Wartenberg (2005) and Outing and Ruel (2004), among others.

that otherwise would be absent (Caputi, 1991). Some examples include an interview of a South African Pastor tortured during the Apartheid followed by a “Diamonds forever” commercial (Corcoran, 1987), a miscarriage scene in a soap opera followed by a pregnancy test ad (Caputi, 1991), and the not-so-perfectly matched segments of a scene of a mother concerned for her child’s happiness followed by a children’s cereal commercial that makes children happy (Budd, et al., 1985).

Besides broadcasting and film, media flows are also embedded in new media technologies, such as databases, search engines, and hypertexts, which propose different navigation paths through hyperlinks. The difference between these and broadcasting flows is that in the former the user participates in the construction of the flow by choosing different links, whereas in television and radio programming the receiver can only alter the flow by changing the channel. In a study of online mourning spaces, Walker (2007) describes how databases allow the user to connect disparate elements by juxtaposing content contained in the database. Searching the mourning database of the September 11 attacks, Walker was able to temporally juxtapose two contrasting images: a photo of the hijacker and a picture of the flight attendant. In this way, by recombining elements, databases propose new narratives and discourses that interact with the user’s belief system in a unique way. By contrast, Belasco (2002) explains how browsing for periodicals on the web removes articles — once embedded in a page in close proximity to other objects — from juxtaposition erasing the possibility of making serendipitous discoveries that could broaden readers’ information sets. She considers this kind of databases inferior to other media options, like microfilm and web collections, because in these the whole page is presented and the page order of the bound volume is preserved allowing the user to see articles in their original contexts. While taking an article from a magazine or journal certainly removes the elements with which it was originally juxtaposed, Belasco forgets that online databases do not erase the possibility of juxtaposition and serendipitous findings, they just embed the article in a new flow of elements providing different juxtapositions than those it had in its original presentation.

Spatial juxtaposition can be the product of editors’ and designers’ arrangement decisions — as in the adjacent and simultaneous placement of items on the screen, and newspaper and website layouts. It can also be a rhetorical strategy — as artists’ assemblage and superimposition of elements and materials in collages, montages, and photographs; activists’ and advertisers’ messages that re-code signs by placing them together in the same visual space; and, people’s appropriation of diverse objects to denote identity and belonging (Hebdige, 1981). Additionally, it can be the result of either planned or unplanned activities like the superimposition of incompatible buildings (Draper, 2009), the mix of races in urban
spaces (Georgiou, 2006), the existence of two blood types in the same person (Martin, 2007), and the concurrence of incongruous religious objects in *botánicas* (Murphy, 2010).

Regarding the spatial juxtaposition due to designers’ and editors’ choices, a few authors criticize the media presentation of news in which items from different themes and significance appear together in a collage-like form. Berger criticizes the juxtaposition of tragic and trivial images, especially advertisements, claiming that it ignores the fact that “the meaning of an image is changed according to what one sees immediately beside it or what comes immediately after it” (1982, p. 152). Along the same lines as Williams and Postman, he suggests that the meaning of a message can be changed by the other messages that surround it. Berger illustrates his claim by analyzing a spatial juxtaposition from a women’s magazine in which a famine in Somalia shares the page with a perfume ad. For him, this juxtaposition shows the disparity existent between two non-equivalent worlds: “the publicity's interpretation of the world”, where there is no place for tragedy, and “the world’s actual condition” (1982, p. 151). Berger’s intuition is that the juxtaposition of news can trivialize human suffering and pain. His claim is also illustrated by an example analyzed by Wojcieszak (2009), in which the live television image of people being rescued in New Orleans was spatially juxtaposed with an ad of “Royal Caribbean Cruise Ship” at the bottom of the screen.

Regarding newspapers and online news layouts, the juxtaposition of elements in newspapers and news websites has been referred to as a noisy context full of competing stimuli (Schramm, 1949; Wojcieszak, 2009), as a collage presentation (Banash, 2004), and as a ‘mosaic’ (McLuhan, 1964; Holtzman, 1998). In his essay about the nature of news, Schramm (1949) explains that both the content and the presentation of news combine into one stimulus that the reader perceives. The importance of a news item’s presentation, he adds, results from its surrounding elements becoming ‘competing stimuli’ or, in other words, ‘noise factors’. Therefore, a news story is a stimulus competing for the readers’ attention against other stimuli that share the same visual space with it. Similarly, Wojcieszak (2009) suggests that the superimposition of images, captions, and linguistic messages on the television screen, which many times contradict one another or are simply semantically unrelated, can distract viewers as much as if they were reading two different newspapers at the same time. Banash (2004) criticizes, when analyzing pre-modern back pages of newspapers that carried only ads, the ‘irrational juxtaposition’ of non-equivalent items, which suggests that these are strangely and unexpectedly related to each other when in fact they are not. By contrast, McLuhan refers to the newspaper style for news presentation as a mosaic: “multiple information items are arranged in a mosaic on one sheet... it is
the exposure of multiple items in juxtaposition that gives the press its complex dimension” (1964, p. 204) and what differentiates it from other media formats. For McLuhan, the metaphor of mosaic conveys the non-linear and discontinuous presentation of items in newspapers and, according to his followers, in news websites (see Holtzman, 1998). He finds the roots of this type of news presentation in the creation of the telegraph, which displaced lengthy and literary news items from newspaper front pages. According to McLuhan, the mosaic form invites the collective participation of the community in the act of reading news, contrary to the book form that requires individual involvement. The mosaic form also represents several voices and several events in a democratic way. This perspective agrees with Baum’s (2002) claim regarding the mixing of soft and hard news in media content being good for democracy, since it brings information of foreign policy to publics that otherwise would not directly read foreign news. McLuhan’s mosaic description, certainly applies to the form of news presentation in which several items are discontinuously placed close to one another. Qualifying this practice as democratic, however, could be appropriate only if democracy is understood as representing non-equivalent elements as if they were equivalent. As Nerone and Barnhurst (2001) explain about online news layouts, the collage-like presentation of items might flatten news hierarchies because it is difficult to distinguish which are the top news stories. In this sense, although McLuhan recognizes the non-neutrality of news layout, he overlooks the influence of context in the presentation of news. The placement of disparate and non-equivalent items in the same visual space introduces noise in their reception and calls into mind —otherwise not existent— relationships among them.

Spatial juxtaposition of novel, opposite, unexpected, and incongruous elements is deliberately used by artists, activists, social groups, and advertisers, among others, as a rhetorical strategy. In Art, the juxtaposition of heterogeneous elements and materials has been called collage, assemblage, and montage. Many feminist artists choose the collage as their technique for expression because it allows an abrupt juxtaposition of disparate objects and materials, putting into question conventional ideas while proposing a new aesthetic (Raaberg, 1998). Other artists choose juxtaposition as their technique because it allows them to connect apparent incongruent and unrelated elements into a coherent whole. That is Varela's objective in his exhibition named “Juxtapositions” (Baugh, 2006): to show how juxtaposed unrelated elements can represent his Chicano identity and how opposite concepts such as the brutal and the beautiful, the personal and the political can be juxtaposed conveying complex ideas. Computer and program manuals for image editing also refer to the juxtaposition of images as collage, assemblage, and montage (Lynch, 2009). The meaning-making possibilities of juxtaposing incongruous objects are also recognized by photographers. For Douglis (2005), juxtapositions allow the artist to
combine and compare objects differing in appearance or behavior, showing how ordinary things have extraordinary relationships. Montage in film has been described as a juxtaposition of elements but not all juxtapositions qualify as montage (Manovich, 2000). For Manovich, to be a montage, each juxtaposed element should contribute to the meaning of the object and to its aesthetic effects. Similarly, for Blackman (2006), a montage is a juxtaposition of images that do not belong to the same temporal or physical reality but that they can be connected at a symbolic level by juxtaposing them. In his study of the war film genre, Blackman says that juxtaposition is a ‘double-edge sword’ since it can be used to alter the truth as well as to reveal it.

Activists, marketers, and social groups also use juxtaposition as a rhetorical strategy. Feminists use juxtaposition deliberately as a symbolic instrument against sexism and racism in the arts and to connote unconventional ideas. For instance, “Guerrilla girls”, a group of anonymous female artist-activists, use juxtaposition as a strategy to criticize discrimination against women in the art world (Tulley, 2009). They employ juxtaposition in their messages for presenting information in novel and shocking ways, as when they superimposed the head of a gorilla on the face of a nude woman from a famous painting. Similarly, some activists groups use juxtaposition in media campaigns as a metaphor. For instance, the People for the Ethical Treatment of Animals (PETA) started a campaign named “Holocaust in your plate”, in which shocking photographs of Jews in concentration camps were juxtaposed with images of victimized animals in farms, inviting the viewer to do a comparison (King, 2009). Juxtaposition is also used as a rhetorical strategy for marketing goods, as when two complementary products are packaged together to suggest possible uses to consumers (Lam & Mukherjee, 2005). Finally, regarding the use of juxtaposition by social groups, Hebdige (1981), referring to it as bricolage, describes in his ethnographic study of social groups how young individuals use juxtapositions of strange and foreign objects to communicate their identity and to mark group belonging.

Besides its use in layouts and as a rhetorical strategy, spatial juxtapositions can be the result of either planned or unplanned activities which join in the same space incongruous objects. From a Cultural Studies perspective, Draper (2009) uses the concept of juxtaposition to describe the superimposition of disjointed spaces and times. In her analysis of the imagery of post-dictatorship culture in Latin America, Draper criticizes the a-critical juxtaposition of building a mall in what previously was a prison. According to her, this reconfiguration of public spaces endangers historical memory. Also from Cultural Studies, Georgiou (2006) analyzes the juxtaposition of racial, ethnic, and national differences in urban politics.
He explains how some national policies foster the assimilation of these juxtaposed actors by forcing them to adopt the dominant values and norms, instead of accepting the opposition among the different actors and fostering tolerance regarding their differences. In a sociological study about scientific nomenclature, Martin (2007) exposes how some scientists, troubled by the finding of two different blood types on the same woman, negotiate the term to describe the phenomenon. While some of them consider that the phenomenon is an incongruous juxtaposition and, thus, should be called a chimaera, others prefer the term mosaic to describe it since the combination of blood types does not seem to cause a health problem for the patient. This negotiation about scientific nomenclatures shows two different ideas behind the term juxtaposition. The comparison of juxtaposition as a chimaera has a negative connotation, whereas the idea of juxtaposition as a mosaic has the positive connotation of harmony, as in McLuhan’s description of newspaper layout. Finally, the term juxtaposition has also been compared with the term creolization in theology. Murphy (2010) studies how devotional objects from diverse religions are juxtaposed together in botánicas, stores that sell religious objects and religiously-based medicines. Murphy explains how religiously diverse objects are juxtaposed but not blended; their cultural differences remain not only in the store’s aesthetics but also in ritual practices. He compares the concept of creolization, where mixed elements from different languages reach an effective communication process, with the juxtaposition of devotional objects, in which elements from different sources produce new, deeper, and amplified religious meanings.

Some conclusions can be formulated after analyzing temporal and spatial juxtapositions through interdisciplinary lenses. Whether they talk about relationships among signs, flows, collages, montages, objects, or races, all authors agree that juxtaposition is the placing of one thing in close proximity to another and, for most of them, juxtaposition takes place in messages and media. Juxtapositions can mix similar or dissimilar elements together. They propose new relationships among the juxtaposed items and the meaning of an item derives in part from its relationship to the other elements juxtaposed with it. These new relationships suggest hidden messages that contradict or complement the primary message creating new meanings that would be absent if the elements were not juxtaposed together.

For a thorough theoretical analysis of juxtaposition, it is necessary not only to see if elements are temporally and/or spatially juxtaposed, but also to examine the kind, the amount, and the appearance of the juxtaposed elements. With that objective in mind and to allow a systematic analysis of juxtaposition that could be followed by other authors, I define juxtaposition as a complex phenomenon composed of three dimensions that describe different aspects of the interaction between
form and content: density, contrast, and resemblance. Density refers to the number of elements that share a visual space. The higher the number of elements within the same space, the higher its density. Contrast refers to the kind of elements that are juxtaposed; i.e., if they are similar or dissimilar in terms of content, meaning, and significance. In that sense, a highly contrasting space is one whose elements are heterogeneous in terms of content or importance. Finally, resemblance refers to how elements differ or look like each other in their physical appearance. A message is considered to have high levels of juxtaposition when it has a large number of elements sharing the same visual space or temporal frame (high density), when these elements are heterogeneous (high contrast), and when heterogeneous elements physically resemble each other (high resemblance).

Through these dimensions, the context of an item, defined as all the objects that are temporally and spatially juxtaposed with it, can be clearly described. Context functions as a framework or background that delimits and guides the possible interpretations of an item. The logic behind these dimensions is that each of them refers to the conditions that make the context of a specific item more or less complex and to the conditions that make it more or less difficult to signify an item's specific importance and meaning to the reader or viewer, therefore affecting its interpretation and value. For instance, an element embedded in a highly dense visual context has to compete for attention against numerous distracting elements. Schramm's description of juxtaposition as noise and Wojcieszak's criticism about the superimposition of several messages on the screen capture this dimension of juxtaposition: the more density, the louder the noise. Noise, as explained by several models of communication –from Shannon and Weaver's model to contemporary theories— is a barrier for communication whether it refers to a technical noise, such as interference, or a semantic noise, such as differences in meaning. Therefore, a highly saturated environment divides readers' attention into several items. And, if the meaning and value of an item is affected by its surrounding elements, the more elements it has around the more its meaning and value can be affected.

The same happens with contrast. If a page or a sequence contains items similar in content, then the reader can easily categorize its theme and can group items together by finding similarities among them. On the contrary, if items are heterogeneous in terms of content, the layout can mislead the reader to group them within the same conceptual category. According to Gestalt theory, if two elements appear physically close to each other, they can be perceived as part of the same group. Thus, if two dissimilar elements are placed close to one another, then they could be misclassified as being part of the

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10 Gestalt theories and juxtaposition are addressed in detail in Chapter VII.
same group. This dimension is the most analyzed by theorists. Berger’s, Postman’s, Williams’, and other cultural studies theorists’ criticisms about the mixing of trivial content and advertisements with serious content and McLuhan’s description of newspaper layout as a mosaic refer to this dimension of juxtaposition. Similarly, all the artists and activists that use juxtaposition as a rhetorical strategy just focus on the contrasts among juxtaposed items. This dimension is also the most popular definition of juxtaposition for authors who study the presence of the phenomenon outside of media, such as the superimposition of buildings and the mixing of races, blood types, and religious objects.

Finally, similar and equivalent elements are expected to resemble each other, while non-equivalent items are expected to appear different to the readers’ eyes as to visually signify their differences. For instance, similar shapes or colors can make readers mistake one kind of content for another, which can lead to confusion. According to Gestalt theory, if two elements are physically similar, they are usually perceived as part of the same group. From all the analysis of juxtaposition described above, only Nerone and Barnhurst’s criticism is related to juxtaposition’s resemblance dimension. These authors explain that since online news layouts do not visually signify an item’s importance, it is difficult to distinguish the top news stories.

This is the first definition that analyzes the three dimensions of juxtaposition. Each of these dimensions refers to different characteristics of the context surrounding an item. These dimensions are interrelated and their possible effects are also difficult to disentangle. While density can potentially affect readers’ attention, it can also affect elements’ resemblance. The more elements share a visual space, the harder it becomes to see their visual differences. Density also interacts with contrast. The more elements, the closer contrasting items appear to one another. Context matters since it delimits and proposes a meaning for a message and suggests possible relationships with other elements that share the space with it. By providing a collage context, juxtaposition distorts, to a lesser or more extent, the meaning and perceived importance of an item.

How each dimension of juxtaposition affects the meaning and evaluation of an item has not been empirically measured. The authors reviewed above hypothesize some possible effects of juxtaposition: the blurring of contents, the flattening of items’ hierarchies, the trivialization of important items, the creation of hidden meanings, the introduction of noise to the reception of messages, the re-codification and re-signification of items, the suggestion of otherwise non-existent relationships among the juxtaposed items, and the distortion of an item’s meaning. These hypotheses, however, have not been tested. Of those disciplines that test their hypotheses regarding how context affects the
perception and interpretation of a stimulus, psychology and advertising go farther through priming and context effects, though they do not refer to it as juxtaposition.

Processing a stimulus, such as a news item from a newspaper front page, activates its mental representations in memory as well as other mental representations associated with it. Since these representations are already activated and available in short-term memory, they can be used for the processing of a subsequent stimulus, producing a priming effect. Therefore, in temporal juxtapositions where two items are seen one after another in a sequence and in spatial juxtapositions where some elements surround another, the stimulus processed first can work as a prime affecting the processing of a successive stimulus, which in priming terms would be considered the target. Primes can activate thoughts (cognitive priming) and even emotional reactions (affective priming). In this way, the non-neutrality of juxtaposition becomes clear: an item’s meaning can be affected by the adjacent elements that surround it either temporally or spatially. From the eye-tracking literature, we know that the elements placed at the left and above the target stimulus have more potential of becoming primes than those placed at the right or below because readers usually start reading from the upper left to the lower right.

Priming and context effects research from psychology and advertising are addressed in detail in the next chapter. But for now, it is important to point out that, though they have not used news as stimuli in their experiments, their findings provide sufficient evidence to predict that a news event’s meaning and importance could be distorted due to juxtaposition. In its simplest form, priming can speed up or slow down the processing of a stimulus; in its most complex forms, priming can contaminate its comprehension and evaluation and even distort its meaning. Therefore, the objective of this study is to analyze the effects of news juxtaposition empirically. Whether it is a mosaic, a collage, or a noisy environment, the juxtaposition of news is, as other media formats, not neutral or transparent. News contexts could be affecting, just as the content and framing of news, readers’ interpretations of events.
CHAPTER III

PRIMING AND CONTEXT EFFECTS

The literature of priming and context effects is vast, complex, and interdisciplinary. Therefore, the present chapter only gives a brief overview about both phenomena, especially from the perspective of psychology and advertising, two of the most prolific disciplines on the topic. The chapter starts mapping the beginnings of the study of both phenomena in cognitive psychology and its spread to other disciplines. Then, I present the main definitions of priming—from facilitation and inhibition to contamination and influence—and the spreading activation theory, which is the most common explanation behind it. I also present the definitions of context, where I briefly join the top-down versus bottom-up discussion regarding the role of context and contextual knowledge in the processing of stimuli. Then, I explain the relationship between both phenomena as well as the direction of their effects; i.e., assimilation and contrast. Finally, I concentrate on how priming affects news reception, how it is behind other media effects such as framing and agenda setting, and how it has been defined and studied in communication theory.

Mapping the Priming and Context Effects Literature

Priming studies, or the study of the activation of concepts by the processing of one stimulus and its application in the interpretation of subsequent stimuli, were conducted even before the word priming was introduced to the psychology literature. For instance, Leeper (1935) tested the effects of recent exposure on the interpretation of ambiguous stimuli, referring to the phenomenon as ‘perceptual organization’. The theoretical roots of priming can be found on Hebb’s (1949) seminal work on neurons and behavior, and Lashley’s (1951) work on language production, in which he introduced the word priming as mental readiness. Lashley used the term priming to explain that keeping in mind previously heard elements was necessary for language comprehension and that a mediating mechanism that assembled elements in a serial sequence was necessary for language production. Before the word

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priming started to be heavily used in the literature, along the same lines as Leeper, researchers were already interested in category accessibility and recency effects\textsuperscript{12}.

The phenomenon of priming became more popular in empirical studies and theoretically stronger with the spreading activation model proposed by Collins and Quillian (1969) and Collins and Loftus (1975), who described human semantic memory as a hierarchical system of ideas and their relations. The spreading activation theory was later improved in cognitive psychology by McClelland and Rumelhart\textsuperscript{13}—by changing the hierarchical organization into a network of semantic units—and in social psychology by Anderson and Bower (1973), who called it ‘associative network theory’. In these models, semantic processing occurs by propagating mental activation of ideas and concepts connected in memory. When an individual processes a stimulus, the semantic network by which this stimulus is mentally represented is activated in memory and its network components are easily accessible to interpret subsequent stimuli. This is called a priming effect.

While cognitive psychologists, especially in psycholinguistics, conducted experiments using very simple stimuli such as letters, numbers, four-letter words and nonwords, social psychologists chose to prime personality traits\textsuperscript{14}. At the same time, neurologists were also interested in priming mechanisms at the neural level\textsuperscript{15}. Soon, priming as a theory and as a research paradigm spread to other disciplines like advertising, political science, and communication\textsuperscript{16}. These disciplines were interested in even more complex processes—such as voting behavior and purchase intentions—and more complex stimuli such as media content. Nowadays, researchers from several disciplines have tested the priming potential of “nearly all forms of social representation” (Barth, 2006, p. 147).

Context effects research has a parallel history to priming. At least since 1920s, psychologists were interested in the effects of context upon learning, recall, and interpretation and used several kinds of testing stimuli, including complex stimuli such as advertisements\textsuperscript{17}. Anchor experiments about the effects of context on the perception of physical properties of stimuli—such as weight, duration, and luminosity—and later about the influence of context in social judgments were popular in 1950s and

\textsuperscript{12} See, for instance, Bruner and Minturn (1955) and Bulgeslki and Alampay (1961).
\textsuperscript{13} McClelland and Rumelhart (1981), McClelland and Rogers (2003), and Rumelhart and McClelland (1982).
\textsuperscript{14} See, for instance, Neely (1976) from psycholinguistics, and Higgins, Rholes, and Jones (1977) and Srull and Wyer (1980) from social psychology.
\textsuperscript{15} See Fuster (1997).
\textsuperscript{16} To review the differences between cognitive psychological and advertising perspectives regarding priming and context effects see Goya-Martinez (2012a).
\textsuperscript{17} E.g., Pan (1926) and Poffenberger (1923).
1960s. Perception and the study of language—especially in psycholinguistics and connectionism—became the psychology areas most interested in context effects since the 1970s. Studies on perceptual performance pay attention to object and scene identification and recognition, whereas psycholinguistic studies are interested in the effects of context on reading, phoneme perception, disambiguation, and comprehension. The context effects boom in advertising research started a few years later reaching its peak in the 1990s and a large number of studies are still performed today. Many studies from perception, psycholinguistics, and advertising use priming as the most plausible explanation behind the influence of context on disambiguation, interpretation, comprehension, attitudes, and cognitive and affective reactions. Similarly, priming research from social psychology recognizes the importance of context as a priming source (Bargh, 2006), but mostly refers to its research as priming instead of context effects. Decision-making theories also started to pay attention to contexts after Kahneman and Tversky's (1983) seminal work on framing was published. In recent times, context effects research has spread to other disciplines such as economics, political science, and communication.

**Priming**

Even before the theory of spreading activation was proposed, early definitions of priming in the cognitive psychology literature already referred to the idea of activation. For instance, Lashley uses the word priming to refer to ‘facilitation patterns’ temporarily and partially “activated by the... external stimulus” (1951, p. 332). Lashley theorizes about the existence of a mediating process intervening between an individual’s will and her final overt behavior (Bargh & Chartrand, 2000). The temporary activation that facilitates the external response is called priming. Similarly, Bruner’s (1957) concept of category accessibility refers to an active process of having representations ‘ready’ and ‘prepared’ to be activated and accessed during the processing of the following stimulus. The idea that the activation of representations facilitates subsequent processing of related representations and inhibits unrelated ones was later demonstrated in free word-association experiments and in word-identification tasks.

In this way, one of the main definitions of priming is the experience-based process that either facilitates or inhibits the identification of words—in psycholinguistics—or objects—in perception—, after

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18 E.g., Sherif, Taub, and Hovland (1958), Sommer (1965), and White (1964).
19 For instance, Biederman, Glass, and Stacy (1973) for context effects on object recognition, and Foss and Jenkins (1973) and Reicher (1969) for context effects research on reading, letter perception, and disambiguation.
20 E.g., Neely (1976; 1977) and Storms (1958).
being exposed to a prime related or unrelated in meaning\textsuperscript{22}. Facilitation and inhibition take place when the target belongs to the network components activated by the prime, which can have a positive (facilitative) or negative (inhibitory) connection with it (Fuster, 1997). This definition is connected to the idea of priming as mental readiness or mental preparedness (Bargh & Charrand, 2000), since once representations are already activated –or, in other words, ready– they can speed up or slow down future processing of related items.

The definition of priming as facilitating and inhibiting mechanisms that speed up or slow down the perception of stimuli corresponds to many experimental designs from cognitive psychology, that employ simple stimuli in identification tasks. However, when the paradigm of priming has been applied in more complex stimuli in attitude formation and evaluation tasks, its definition changes from facilitation and inhibition to contamination in meaning and the carry-over of mood and affect from prime to target. Through priming, individuals’ feelings and moods toward a program or article can be transferred to an advertisement\textsuperscript{22}. When individuals are in a positive or negative mood, past experiences connected with those positive or negative feelings are activated and associated with the currently processed stimulus, influencing the amount of positive and negative thoughts (or ‘cognitions’) produced while processing the commercial. In this way, individuals’ affective reactions toward the context prime similar affective reactions toward the target\textsuperscript{23}. That is why advertising researchers recommend advertisers not place their ads close to programs that generate negative affective reactions but rather in positive emotional contexts\textsuperscript{24}.

Priming is not only related to the current processing of a target stimulus, but also to the way it is encoded. The way in which a stimulus is firstly encoded, i.e. interpreted and saved in memory, has lasting effects on its meaning and representation, since future retrievals will still carry the influences of the primes that originally shared the context with it\textsuperscript{25}. Even if the individual qualifies her judgments about an item according to the specific context, situational factors fade away over time and what remains is usually the original encoded information. A few advertising researchers use this idea to

\textsuperscript{21} Bar (2004) and Harley (2008).
\textsuperscript{25} Beller (1971) and Srull and Wyer (1980), respectively.
explain how the original context in which a new product or brand was firstly processed by a consumer still has influence over her future judgments, even if it is not embedded in a similar context.\footnote{An example is Meyers-Levy and Tybout (1997).}

Behind facilitation and inhibition, contamination in meaning and affect, and encoding effects, is spreading activation. The theory of spreading activation rests on the conceptualization of memory as a networked system of semantic units, linked to one another according to mental hypotheses acquired gradually and weighted through experience.\footnote{McClelland and Rumelhart (1986) and McClelland and Rogers (2003).} In connectionist terms, semantic and syntactic units are represented in our memory by nodes or groups of nodes related in networks, connected by links through which activation spreads. Connectionism goes back to priming earliest theoretical roots based on Hebb’s (1949) work on neurons and behavior; in fact, some of his learning rules are still used in contemporary connectionist models.\footnote{See Houghton (2005).} In this way, priming refers to the temporary activation of mental representations that can be used in the processing of subsequently encountered stimuli affecting their perception, interpretation, and evaluation. Two elements are involved in priming effects: the prime, which is the stimulus that originates the activation of mental representations in the mind of the perceiver, and the target, which is the stimulus that might receive the influence of the prime. There are two ways a prime might exert its influence: by a matter of recency or frequency. Recent primes are usually accessed before frequent primes, but the influence of the latter lasts longer (Srull & Wyer, 1980); and, depending on how frequently a prime is activated, it may become chronically accessible. The influence can come from the activation of the prime’s representation or, more indirectly, from other representations connected to it, which can become partially activated or inhibited through spreading activation depending if their association to the prime is positive or negative. Higher activation levels increase the probability of a mental construct being used in subsequent processing of stimuli. Priming effects are mediated by and interact with several factors including individuals’ personal goals, motivations, interests, knowledge, levels of attention, and personal experiences.

Not only phonemes and meanings but behaviors and attitudes are represented through networks and that is why priming effects can go from the simple facilitation or inhibition of phonemes, concepts, and sentence structures --as in semantic and syntactic priming (Harley, 2008)--, to the complex influence on evaluation and even the guidance of behavior and attitudes --as in the priming of values, social norms, and personality traits (Bargh, 2006)--, where the activation of a concept, mood, or feeling automatically spreads its activation to other items to which it is connected in memory. Activations can
be stimulated by internal sources, such as ideas and thoughts, or by external sources, such as objects, messages, and contexts.

**Context**

The word context, from the Latin *contextus*[^29], has been used in disciplines such as linguistics, semiotics, and rhetoric to refer to the physical or symbolic habitat that surrounds a particular sign, word, message or event, which help to interpret or decode it in a particular way. Context is understood by these disciplines as the outline that delimits a linguistic entity by actualizing its meaning and function in relation and opposition to the other entities that share the frame of reference with it (Beristain, 1997).

Similarly, in cognitive psychology, context refers to all the sensory information besides the target stimulus’ sensory data that helps determine the output of perceptual and post-perceptual processes[^30]. The context is the main source of possible mental activation and, thus, it includes external sources such as stimuli spatially surrounding a target stimulus –like words and sentences surrounding a word, and like objects, backgrounds, settings, and anchors surrounding a object in an image or situation– and temporally preceding encountered stimuli –like the prior context, perceptual sets, primed stimuli, the immediate environment, and situational factors[^31]. Contextual information also includes individuals’ knowledge about the world and recent experiences, higher knowledge sources –like syntactic, pragmatic, and semantic data previously acquired–, and mental lexicon and language experience[^32]. Contextual knowledge helps making sense of contexts and using them in perceptual and interpretational processes. For instance, individuals’ knowledge about the world makes it possible to use surrounding objects and backgrounds for determining an object’s identity. The conjunction of these individual and external contextual factors becomes “the ‘glue’ that binds objects in coherent scenes” (Bar, 2004, p. 617). Most operationalizations of context refer to externally manipulated stimuli –such as words, sentences, images, and media content–, and, in advertising literature, also to the type of medium

[^29]: www.rae.es
[^32]: See Bar (2004), Foss (1998), and Harley (2008), respectively.
and viewing situation, including instructions and settings as well as any surrounding information to which the individual is incidentally exposed\(^3\).

Psychologists relate contexts and contextual information to concepts such as co-occurrence, predictability, constraints, prototypes, and consistency; i.e. to top-down facilitation processes. In the top-down versus bottom-up discussion, researchers are interested in the exact role of context in perceptual and post-perceptual processes as well as in the processing stage in which it affects them. The proponents of top-down influences in the perception and processing of stimuli consider that contexts as well as individuals’ expectations and experience facilitate, though in some cases misguide and bias, our perception of stimuli. Individuals’ expectations are based on their knowledge and experience about which objects and contexts co-occur in the world (e.g. a microwave in a kitchen) and which words co-occur in sentences. Top-down influences are considered to speed up and facilitate bottom-up processes when contexts and objects are semantically consistent, or to slow down and bias them when these are semantically inconsistent. For instance, participants sometimes remember having seen semantically consistent objects in a scene even when these were absent; these are called false memories (Bar, 2004). Similarly, many participants in psycholinguistic experiments do not notice if a phoneme is absent when this is exchanged for a cough (Warren, 1970). In these cases, top-down knowledge fills the absent information. On the contrary, bottom-up proponents consider that processing and perception are data-driven mechanisms that operate independently from the context and from individuals’ expectations and previous experiences. For bottom-up proponents, there are no context effects in object identification and language recognition (Henderson & Hollingworth, 1999), though a few of them think that there might be some post-perceptual biases induced by the context.

In his defense of perception as a top-down process, Gregory (1980) explains the relevance of contextual knowledge or collateral information for reading signals as data or, in other words, to perceive an object as such. This is because bottom-up information in the real world is generally absent or too numerous “to guide attention efficiently” (Chun, 2000, p. 170). Contextual data guide eye movements because objects that frequently co-occur usually have similar spatial configurations in their contexts (Chun, 2000). Objects co-occurrence makes it easy to predict which objects or words are present in a certain context and also sets constraints on the kind of objects or words that can be found as well as their positions in the spatial configuration or sentence. For Bar (2004), the fact that objects co-occur –

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and, therefore, that are processed together—might explain why the recognition of an object facilitates the recognition of other objects that share the context with it. This is proved in the classic experiment of Reicher (1969), in which participants had higher accuracy and speed rates on identifying letters when these were presented in meaningful contexts (i.e. words) than in isolation. As McClelland and Rumelhart (1981; Rumelhart & McClelland, 1982) explain, letters embedded in words are more perceptible than single letters because they receive more activation. This example is also related to another property of contexts: meaningfulness. Contexts have semantic properties and, therefore, contribute to the meaning of the objects within them.

All these context characteristics—co-occurrence, predictability, constraints, and meaningfulness—promote the construction of context prototypes, also called contextual schemas or frames. Prototypes are mental structures that represent contexts by integrating information about key objects in a context, their likelihood of appearance, and their spatial and semantic relationships. Each prototype has “infinite possible exemplars” but the main properties remain fairly consistent (Bar, 2004, p. 617). The identification of a stimulus could take place as a multistage process initiated by a holistic recognition of the context, which then could bias possible combinations of features and memory representations (Biederman et al., 1973).

Bottom-up theorists consider that if context influences language recognition, top-down researchers would need to show that these contextual influences take place during the “bottom-up processing of the acoustic signal” (Harley, 2008, p. 266), which means that a word or a sentence meaning would have to facilitate the recognition of a simple language sound, or, for perceptual processes, they would need to prove that object identification is sensitive to the meaning of a scene (Henderson & Hollingworth, 1999). If these two facts can be confirmed in experiments, then top-down theorists would show an irrefutable proof that context and contextual knowledge affect the processing of stimuli at the perceptual level. Some researchers suggest that what can be affected by contexts might not be perceptual but post-identification processes such as responses to the stimulus and guessing strategies

Regardless if the effect takes place during bottom-up or post-identification processes, context would be affecting individuals’ minds before an overt behavior is produced.

The disambiguation of stimuli has been used as an argument by top-down theorists. Gregory (1980) explains that bottom-up information can be ambiguous and only through contextual information

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we are able to disambiguate it. Perceptual set studies, interested in the effects of recency of exposure to a stimulus, provide a good example of this. Leeper\textsuperscript{35} (1935) showed half of his participants the picture of an old woman and a picture of a young woman to the other half. Then, he showed them an ambiguous picture (Boring’s old woman/young woman figure) and most participants interpreted it as the type of figure they were previously exposed to. The same result was obtained in the perceptual studies conducted by Bruner and Minturn (1955) and Bugelski and Alampay (1961), in which they showed an ambiguous stimulus (a broken ‘B’ or a 13 in the former, and the ‘rat-man’ figure in the latter) after exposing participants to elements from one of the possible disambiguation categories (letters or numbers and animals or human faces, respectively). In these cases, contexts induced individuals to recognize a subsequent stimulus as being part of the same category of objects. As Brewer and Lambert explain, these studies show that contexts affect more than simple interpretation processes, giving “rise to two qualitatively different perceptual experiences” (2001, p. 6). Finally, context is also used to explain disambiguation in the comprehension of texts and word meaning\textsuperscript{36}. There are three views regarding the role of context in the disambiguation of words: first, context determines which interpretation is accessed and which ones are inhibited; second, the most common meaning is accessed and is discarded afterwards if it is inappropriate for the context; and, third, all meanings are accessed and then the one that has best contextual fitness is chosen (Foss, 1988). This idea of using context for disambiguation is also present in several connectionist models\textsuperscript{37}.

Discussions about top-down processing of more complex stimuli, such as media content, are scarce in the literature. However, top-down influences surely operate in context effects in terms of contamination of meaning and mood. The same set of characteristics of top-down mechanisms that take place in the processing of simple stimuli –co-occurrence, predictability, constraints, prototypes, and consistency– should also occur in the processing of complex stimuli. Only a few authors talk about top-down and bottom-up processing of complex stimuli. As an example of this, Park and Smith (1989) tested if purchasing choices were guided by top-down influences (defined as ‘goal-driven’) or by bottom-up data (defined as ‘product-driven’). However, the researchers do not discuss if the product information perceived by the individual could also be affected by top-down influences. This is a promising area of research especially in disciplines, like communication, whose theories and models would be more

\textsuperscript{35}Quoted in Brewer and Lambert (2001).

\textsuperscript{36} For instance, Bransford and Johnson (1973), Foss (1988), and Harley (2008).

\textsuperscript{37} See McClelland and Rumelhart (1981) and Rumelhart and McClelland (1982).
informed and precise by extending cognitive psychology concepts and findings to complex stimuli such as media content.

**Priming and Context Related**

Priming and context are deeply interrelated. First, a lot of priming definitions and experiments refer implicitly to contexts. Second, priming is the dominant explanation behind context effects and it is used as a technique to measure them. Most importantly, most researchers agree that contexts provide the source for the activation and that priming is the activation itself. While priming and context refer to different things, this is not so clear when one compares priming effects with context effects. Still, a few researchers either do not mention priming as the mechanism behind context effects or propose alternative explanations for these instead of priming.

Most definitions of priming make reference to temporal or spatial contextual elements even when they have other names for them (e.g., external stimuli or sources, environments, and recent or current experiences). In the definition of priming as well as in its experimental designs, prime and target are usually contextual stimuli. Most experiments place prime and target in the same context, expecting that individuals will evaluate the target after being influenced by the prime (as in ads embedded in magazines or television programs, and as objects embedded in scenes). Research findings show that contexts can prime objects and objects can prime whole contexts, as when the background or the scene is used to identify an object and vice versa.

If context usually appears in the definition of priming and priming in the definition of context, it is not surprising that priming is the dominant explanation behind context effects in the literature. An example of this is the priming model of context effects in object recognition. This model suggests that contextual effects arise in the matching stage, when structural descriptions of objects are matched against long-term memory descriptions. The activation of the scene-prototype primes stored representations of objects consistent with that scene. Priming is also the main explanation behind context effects in attitude formation, evaluation, disambiguation, and cognitive and affective responses toward a target stimulus. In addition, some researchers use priming techniques as a method to induce context effects and to compare the influence of different contexts on cognition and behavior. These

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38 Proposed first by Friedman (1979) and later by Bar and Ullman (1996), and criticized by Henderson and Hollingworth (1999).
priming techniques usually occur in two stages. In the first stage, participants are exposed to the prime; in the second, they have to evaluate a target.

Priming is considered “the mere activation –not the source of or reason for the activation” (Bargh & Chartrand, 2000, p. 266); i.e. the temporal activation of mental representations that increases their construct accessibility and activation potential. Context, on the other hand, is usually considered the source of that activation; i.e. the raw material that originates or stimulates priming. While there is a clear difference between priming (the temporal activation) and context (the external source), the difference between priming effects and context effects is not so clearly explained; in fact, the relationship and difference between these two terms remains ambiguous in the literature. If context is the source and priming the activation originated from the exposure to that source, what causes the effects? While priming is a necessary condition for most of the types of context effects recognized in the literature, context is not the only –though it is the most common– source for priming to take place, since it can also originate from internal sources. Ideas can prime other ideas and contextual knowledge previously stored in memory can prime, for instance, features of the environment or backgrounds facilitating their perception. In this way, context effects would be a kind of priming effects. Perhaps, the term that best recognizes this relation is ‘contextual priming effects’39, since it highlights the source of priming and identifies both elements (the activation and its source) as causes of the effects.

Priming is absent as an explanation behind some context effects research. For instance, it is not used as a theoretical explanation in classic anchoring studies. In another example, in his classic experiment, Reicher (1969) does not relate the word-advantage effect in letter recognition to priming; instead, he explains “that letters are forgotten more quickly than are words” (1969, p. 279)40. Among the alternative explanations behind context effects that advertising researchers have suggested are emotional disruption and cognitive overload41. It has been hypothesized that individuals who perceive inconsistency between the context’s and the target’s affective tone experience emotional disruption. According to this hypothesis, happy advertisements are evaluated as appropriate if embedded in a happy program, while they might be perceived inconsistent and inappropriate—even frivolous—when embedded in a sad content (Goldberg and Gorn, 1987). In this way, in contrast to the priming

40 Priming was later added to the word-advantage effect by McClelland and Rumelhart40, who explain that the activation of the mental representations of the context-letters spreads to the mental representation of the target letter speeding up its processing.
perspective, consumers are totally aware of the inconsistency between the ad and its context; they want to continue experiencing an emotional state that is interrupted by the inconsistent advertisement. However, when the ad does not alter viewers’ feeling state, like a happy ad in a happy program, advertisement effectiveness is enhanced (Coulter, 1998). Even when priming is not discussed as a possible mechanism underlying emotional disruption, it cannot be ruled out. The inconsistent emotional responses fostered by the target might inhibit the emotional responses previously generated by the context, giving rise to contrast effects in advertisement evaluation.

In contrast to emotional disruption, cognitive overload, or the amount of context-induced cognitive processing, does not only affect individuals’ attitude toward the ad but mainly its recall. Just as consistency in emotional tone has been proved to enhance advertisement effectiveness, consistency in the kind of involvement (cognitive versus affective) has been proved detrimental in some cases. When cognitive ads are embedded in cognitive programs, individuals experience cognitive overload and, thus, they are not so cognitively involved in the ad since cognitive resources are still processing the program (Celuch & Slama, 1998). In this way, if processing activity is uneven in favor of the context over the target stimulus, detrimental context effects on target’s recall are predicted (Schumann & Thorson, 1989). In addition, the more involving is the content—the more suspenseful, attention-grabbing, interesting, and stimulating in rating scale scores—the lower individuals’ memory scores on ad recall (Norris & Colman, 1992). However, when cognitive and affective ads are embedded in affective programs, their evaluations improve and this effect—but not cognitive overload—is explained through priming (Celuch & Slama, 1998). It is not clear why priming is not offered as an explanation behind the low recall of target stimuli in these studies, and why it has been used at the same time by a few authors (e.g., Celuch & Slama, 1998) to explain an improvement in their evaluation when the context does not require high processing activity and it is not so involving. It could be that priming is taken in these studies only as activating mental representations, leaving out the possibility that it might also inhibit them. If the context is inducing a high processing activity, this activation might be inhibiting the mental representations related to the target stimulus, slowing down and hindering its recall.

The Direction of the Effects: Assimilation and Contrast

Two main context effects have been found in the literature: assimilation and contrast. While the use of these two concepts in relation to context effects goes back to the classical anchoring experiments
performed by Hovland and his colleagues\textsuperscript{42}, they lost popularity in cognitive psychology but they gained it in social psychology\textsuperscript{43} and, later, in advertising research\textsuperscript{44} and other disciplines. The original sense of assimilation and contrast in anchoring experiments was not connected to the concept of priming. Later, priming experiments found that, in some cases\textsuperscript{45}, the prime worked as an anchor or standard for comparison displacing subjects’ responses in the opposite direction of the prime.

For Schwarz and Bless (1992; 2005), in their inclusion/exclusion model, the key factor in determining the direction of the effect is whether participants include (assimilation) or exclude (contrast) the target from the same category as the prime. Thus, assimilation takes place when participants judge the target stimulus according to the prime (Herr, 1989), when prime and target are considered to be part of the same conceptual category or when prime’s features are included or over-represented in the mental representation of the target\textsuperscript{46}. On the other hand, contrast occurs when participants judge the target stimulus in the opposite direction of the prime (Herr, 1989), when the prime is used as a standard for comparison against which the target is evaluated (Schwarz & Bless, 2005), or when they over-correct their responses due to awareness or suspicion of priming influences. Advertising researchers relate the direction of the effects with the congruency between prime and target. When there is congruency between prime and target, an assimilation effect is hypothesized. If there is no congruency, emotional disruption might cause contrast. For some advertising researchers, these two effects are not mutually exclusive and can operate simultaneously and additively within the same evaluation\textsuperscript{47}.

An important difference between the use of these concepts in anchoring studies and in contemporary priming research is that, in the former, participants were fully aware of the anchor, while, in the latter, researchers manipulate experimental conditions to keep participants unaware of the prime. In fact, if a participant is suspected of being aware, some researchers discard her responses from the analysis because she could be consciously ‘overcorrecting’ her judgment to avoid being influenced by the prime (Bargh & Chartrand, 2000). However, if this is the case, those responses should not be discarded but analyzed separately since, according to the theory, awareness can be producing larger

\textsuperscript{42} Hovland, Harvey, and Sherif (1957) and Sherif et al. (1958).
\textsuperscript{43} E.g., Higgins et al. (1977), Schwarz and Bless (2005), and Srull and Wyer (1980).
\textsuperscript{44} For instance, Kirmani and Yi (1991), Lynch, Chakravarti, and Mitra (1991), and Mitchell (2002).
\textsuperscript{45} Such as with extreme exemplars, expert participants, or with participants’ awareness. See Bargh and Chartrand (2000) and Herr (1986).
\textsuperscript{46} Schwarz and Bless (2005) and Wanke and Kutzner (2002).
contrast effects and, thus, –be it unconscious or consciously– can also have an effect on overt behavior, attitudes, and evaluations.

Priming and News

Lippmann described how individuals’ experience about most events is neither direct nor objective, but mediated by media messages, especially news. Media, according to Lippmann (1922), not only give a particular representation of events, but also act as searchlights that –by matter of covering some issues and ignoring others– make visible some events leaving others in the darkness. Lippmann’s legacy was a source of inspiration for the research paradigms of agenda setting and framing, which give different perspectives of how the amount of information about events and the way they are described affect not only what people think but how they think about them48. Lippmann forgot to mention that the images in our head about an event are not only affected by the amount of information about it and by the way it is described, but also by the media contexts in which it appears.

Though media effects have been proved to be mostly indirect, humans are vulnerable to news contexts, because they are cognitive misers whose evaluations are affected by contexts and the mental representations these might activate. The fact that media present readers and viewers with a huge and diverse amount of stimuli makes them a particularly successful external source of primes. Media messages activate many kinds of mental representations, from simple objects and concepts to schemas, attitudes, behaviors, stereotypes, and cultural ideologies. In this way, priming is very likely to be behind many identified media effects such as context effects, agenda setting, and framing, and not just metaphorically as Roskos-Ewoldsen, Roskos-Ewoldsen, and Carpentier (2002) point out.

In terms of context effects, media not only provide individuals with a variety of messages, but each of these is always surrounded by other messages that contextualize it. Each of the contextual messages becomes a potential prime that might affect the perception and evaluation of a target media message. News stories usually appear temporally and/or spatially juxtaposed to other elements such as other news and ads. While there is a large amount of research on the effects of news and other media content on the perception of advertisements49, the opposite (i.e., the research on the effects of ads on news stories) has been scarce. These few studies on the effects of commercials on the perception of

48 Entman (1991), McCombs and Shaw (1972), and Scheufele and Tewksbury (2007).
49 See, among many others, Coulter and Punj (1999), Goldberg and Gorn (1987), and Janssens and De Pelsmacker (2005).
news have found that humorous advertisements increase the perceived importance of soft news stories in television (Biocca, David, Dion, Goodson, Lashley, & Tan, 1992) and also affect the perceived news value of hard stories in light internet users (Yang & Oliver, 2004), and that positive moods fostered by television commercials increase the perceived entertainment value of news stories (Wirth et al., 2010). In conclusion, the juxtaposition of news provides readers and viewers with a diversity of potential primes that could influence the processing of a particular news event. From the studies on news juxtaposition, only the present research analyzes the effects of contextual news stories on the perception of a target news event.

Agenda setting, or the capacity of media to influence individuals about which political and social issues are considered most important by assigning more time or space for coverage to certain news events, can be considered a type of priming effects (Price & Tewksbury, 1997). As Price and Tewksbury (1997) argue, by selecting and emphasizing some issues and discarding others, media can affect the level of activation of certain mental representations increasing their readiness and accessibility to be used when evaluating political leaders or when naming the nation’s top problems. In this way, agenda setting effects are related to the frequency of the prime. After several frequent activations, however, the effects change from priming to chronic activation since the baseline activation of the representation of those media constructs becomes higher, increasing and facilitating their possibility of being activated.

Framing, as agenda setting, is a matter of selection and emphasis but not about whole issues but about their particular actors and characteristics (i.e., the way particular issues are presented). Frames promote a particular reading and interpretation of an event by making some of its characteristics more salient, while obscuring others. By framing an event in a certain manner, news stories suggest a problem, propose solutions, and dictate moral evaluations and importance judgments about it (Entman, 1993). When reading a news story, framing is more related to the recency than to the frequency of the prime. The elements and values emphasized in the news article become activated and, since their mental representations are more accessible than other possibly relevant elements previously stored in memory, they are more likely to be used when evaluating the news event described in the story. After being exposed several times to similar frames about a news event, the likelihood that the elements repeated across frames become associated in memory increases—as some connectionist learning models propose (Houghton, 2005)—generating a mental schema that could be easily primed and further accessed to interpret similar situations. The influence of these schemas, just as the issues promoted by the media’s agenda, can also move from priming to chronic activation depending on their
priming frequency. This explains why some researchers have been able to find different (somewhat fixed) schemas about certain political issues in different cohorts that were exposed to different media frames even some years after the target event took place (see for instance, Gamson & Modigliani, 1989).

Even when priming might be behind these media effects, communication scholars pay little attention to priming and contexts effects. Media priming in communication literature has been used mainly in two areas: media violence and political priming. The studies of violence media priming focus on how the exposure to violent messages might prime hostile ideas and behaviors in individuals, evoking subsequent aggressive thoughts, attitudes, and behaviors50. Political priming focuses on how media messages alter and prime the criteria through which political leaders are evaluated and how they influence voting decision-making51. In this respect, political media priming has been theoretically related to agenda setting and even considered subordinate to it52, when in fact the mechanisms of priming are broader than those of agenda setting (Price & Tewksbury, 1997). Many of the studies about political media priming, however, seem to confuse the concepts of priming and chronic accessibility, and the effects of recency and frequency (see criticisms of Roskos-Ewoldsen, Klinger, & Roskos-Ewoldsen, 2007; and, Althaus & Kim, 2006; respectively). While priming refers to temporal activation, chronic accessibility refers to the capacity of some mental constructs of having a baseline activation level higher than other constructs, increasing, therefore, their chances of being activated and accessed during processing. In other words, chronically accessible constructs are partially activated regardless of individuals’ current exposure to the stimuli they represent. A mental representation might be chronically accessible due to personal experiences and goals, or after being repeatedly exposed to a stimulus for a long time (what could be considered cumulative priming effects). In addition, chronically accessible constructs might also be primed increasing, just temporarily, their partial activation even more (Barth, Bond, Lombardi, & Tota, 1986).

Media scholars are falling behind in the study of cognitive media effects when compared to other disciplines such as psychology and advertising. Since media stimuli are richer and more complex than most experimental stimuli used in psychology, the generalization of psychology findings in priming research to communicational phenomena has still to be proved. In this respect, communication as a

50 Two prominent examples are, for instance, Anderson (1997) and Berkowitz and Rogers (1986).
discipline still has to explore the influence of a variety of media primes in cognitive processes and the mechanisms behind these effects. Communication scholars have to pay more attention to contexts since their effects might be interacting with the amount of coverage and the kind of information published about an event; i.e., agenda setting and frames, which have occupied a much more central role than contexts in communication research.
As explained in previous chapters, not only has news juxtaposition received little attention as a cultural phenomenon from media critics, but also there have been only very few attempts to study it empirically. In addition, very few studies propose a model about how these media influences on cognitive processes might take place. Previous models about news media priming explain some of the mechanisms involved but they do not focus on context effects due to news juxtaposition. Therefore, the objective of this chapter is to propose a model to theorize how these effects might take place. The model takes into account previous findings and theories from priming, context effects, framing, and connectionism research, as well as previous models about news media priming. For this, I discuss why a network structure is appropriate for the model and why a new model is needed. Then, I present the model. Finally, I conclude emphasizing the new elements added to the theory by the model and I briefly explain how other media effects can be explained through it.

Why a Network Model?

An appropriate way to theorize and explain the context effects of news juxtaposition is through a network model. There are several reasons for this: first, network models are neurally inspired; second, they allow mental constructs to be connected in memory; third, network models allow for spreading activation and priming to take place; and, finally, networks are vulnerable to noise and contamination.

By contrast to other models, neural models are inspired by how we believe the brain works (Houghton, 2005). Before connectionist models appeared, the dominant metaphor in cognition was the computer metaphor, which considered that the mind was the software and the brain the hardware of cognitive phenomena. The computer metaphor suggests that the same software could run in different kinds of hardware (Houghton, 2005). Such a metaphor overlooks McLuhan’s (1964) principle that the characteristics of any medium affect the kind of processes and messages that can be made with it. By
contrast, connectionist models propose that the way the brain works has to be taken into account when explaining cognitive phenomena.

Neural systems are organized in networks. Human memory is neurally described as “networks of interconnected cortical neurons, formed by association, that contain our experiences in their connectional structure” (Fuster, 1997, p. 451). Memories are formed by the association of neuronal aggregates connected through synaptic links with different weights. Neural connectivity allows the same neural aggregate to belong to different, overlapping and infinite number of networks supporting personal experiences and knowledge (Fuster, 1997), conferring, therefore, uniqueness to individuals’ cognitive memories. If at the neural level memory is represented in networks, it makes sense to model semantic memory—a system for the storage of knowledge about objects, their properties, their relationships, and their meanings (McClelland & Rogers, 2003)—as a similar networked structure.

A networked semantic memory allows mental constructs to influence each other. Semantic networks are composed of nodes and their connections. Each node represents a cognitive unit and its current psychological strength is represented through an activation level (Houghton, 2005). Connections between nodes work as pathways through which activation spreads. When a node is activated, its activation spreads to its network associates, exciting or inhibiting the nodes positively and negatively connected to it, increasing or diminishing their activation levels. Units can be connected positively if they are semantically or contextually related and negatively if they are incompatible at the cognitive level. The weight of the connection represents the strength of the influence of one node over another. Learning takes place by establishing new connections among units (Hebb, 1949) and by changing the weight of old connections (Houghton, 2005).

When a stimulus is processed, it activates the nodes that represent it. Then, the residual activation of previously activated nodes or the changes in the activation levels of their associates can affect the subsequent processing of stimuli. If a node is active, its probability of being used for the processing of currently received sensory information increases. If the activation level of a node diminishes by matter of being inhibited by a previously activated node, its probability of being used in further processing decreases or, in case it is used, the reaction of the individual toward the stimulus would be slower or with lower performance. The activation spread by a sending node to a receiving node is the result of the multiplication of the former’s activation level by the weight of the connection from the sending to the receiving unit. The total activation received by a particular node from several sending nodes, also called net input, is transformed by an activation function, which—depending on the
model—can consist in a simple summation of the activation received or on a complex nonlinear equation (Houghton, 2005). The temporary changes in nodes’ activation levels result from priming. Since the activation level of a unit decays gradually, priming temporally modifies the psychological strength of mental representations increasing or decreasing their probability of being used in subsequent judgments.

The fact that connected cognitive units can influence each other’s activation level and the fact that each unit—just as neural aggregates—can participate in the representation of several related concepts, also known as distributed representation of memory, make the network vulnerable to noise and contamination (Houghton, 2005). The meaning of a word is obtained by “how it is embedded within a network of other meanings” (Harley, 2008, p. 325); in other words, meaning derives not only from the activation of a particular cognitive unit but also from the activation of the other nodes to which it is connected. Thus, changes in one unit might alter the meaning or value of what is being represented. In this way, while network connectivity and a distributed representation of concepts have several cognitive advantages such as speeding up perception or providing shortcuts and heuristics for the interpretation of the world, the disadvantage of these systems is their vulnerability to priming effects allowing assimilation and contrast to take place. In conclusion, network models of memory not only resemble how the brain actually works but also make possible for units to interact affecting the processing of stimuli.

**Why a New Model?**

There are several reasons why a new model is needed to explain the context effects fostered by news juxtaposition: first, just a few of the previous priming models in communication have focused on context effects, and advertising models about context effects do not focus on their cognitive components; second, many of the previous models about cognitive media effects are not network models; and, finally, the best media priming models available in the literature (Price & Tewksbury, 1997; Lodge & Taber, 2007; 2013) either lack the latest findings from social and cognitive psychology or do not fully integrate assimilation and contrast, which are the two main outcomes usually found in context effects research.

Most media priming models within communication come from two research areas: political priming and media violence. None of these areas is interested in contexts. As explained in the previous
chapter, while political priming addresses many questions related to the effects of media coverage of events, it usually overlooks how news stories are visually contextualized among other elements; though recently, it is focusing in contexts (Lodge & Taber, 2007; 2013). Similarly, while media violence focuses on what ideas are activated by exposure to violence, it overlooks how the elements surrounding a violent message might mediate its effects on individuals. In addition, while advertising researchers are interested in context effects, their models focus more on the correlations of external measures of attitude variables toward the ad and its context than on the cognitive mechanisms behind the effects. In this way, while some elements of the models proposed by these research areas could be useful to understand the effects of news juxtaposition, a new model that pays special attention to the cognitive processing of media contexts is needed.

Not only do previous models pay little attention to contexts, but also many of them are not network models, which, as explained in the previous section, are the most appropriate models to explore the effects of priming in news juxtaposition. On one hand, previous models that successfully explain some results are not easily translated to network terms, such as Wyer and Srull’s storage bin model (1980) and Schwarz and Bless’ inclusion/exclusion model (1992, 2005). On the other hand, other models, such as Roskos-Ewoldsen et al.’s mental models approach (2002), propose that semantic networks should be subordinate to broader mental frameworks but do not explain how effects take place and how cognitive units interact among them.

Wyer and Srull’s storage bin model (1980) proposes that mental representations are stored in storage-bin-like structures; recently primed units, instead of being returned to their original position, are stored on the top of the bin. Since the model proposes a top-down retrieving of constructs, the closer to the top of the bin a unit, the higher is its probability of being used in further processing. This metaphor successfully explains how more recently used mental constructs are available and ready to be used for subsequent processing of stimuli, but it does not allow mental constructs to influence each other.

Another model that has been successfully used to predict priming effects is Schwarz and Bless’ inclusion/exclusion model (1992; 2005). This model lists some conditions that bias the influence of a prime on the evaluation of a target toward assimilation or contrast. When a target is evaluated in the same direction as the prime, an assimilation effect takes place. For instance, if the prime is positive, the target is positively evaluated; if the prime is negative, the target is negatively evaluated. A contrast effect takes place when the target is judged in the opposite direction to the prime. Thus, a positive prime fosters a negative evaluation of the target, while a negative prime promotes a positive evaluation.
Assimilation effects take place when prime and target are considered to be part of the same conceptual category or when the prime’s features are included in the mental representation of the target. Contrast effects occur when the prime is used as a standard for comparison against which the target is evaluated. A similar model was proposed within the social comparison framework by Mussweiler (2007). In Mussweiler’s model, like in Schwarz and Bless’ model, assimilation takes place when the standard for comparison resembles the object to be judged. For this, the individual does a similarity or a dissimilarity testing, in which prime and target are compared. If the similarity test results are positive, then it produces assimilation, if not, it produces contrast. Awareness of a possible influence of the prime fosters contrast, a great overlap of features between prime and target fosters assimilation, and if information is presented in a way in which target and prime are bounded within the same category the direction of the effects will be biased toward assimilation and if not toward contrast. Although both models help to predict the direction of the effects, it is not clear in network terms how assimilation and contrast would take place. The cognitive processes participating in the evaluation are not examined beyond the variables that affect target’s categorization. Thus, these two effects still have to be incorporated in a network model.

A model that stands as a criticism to network models of media priming is Roskos-Ewoldsen et al.’s mental models approach (2002). Basically, this model suggests that information about a situation is mentally stored in schemas or mental models that relate its different elements in a particular way. Accessible concepts influence the kind of model that is retrieved or constructed about a situation. This model seems to be more suitable for explaining framing effects, in which the elements activated by the story frame are taken into account to elaborate a mental schema of the situation or event, rather than context effects or agenda setting. The authors claim that mental models provide a broader framework to understand media effects than spreading activation and priming. However, this model refers to the influence of accessible concepts in the formation of schemas, which clearly results from priming. It is not clear in the model how cognitive units interact to form schemas, how these are stored and retrieved, and how they might bias evaluation toward assimilation or contrast. In this way, the mental models approach cannot explain the influence of some cognitive constructs over others during the processing of stimuli. Probably, the mental models approach takes priming in its simplest form, which would be basic conceptual priming. However, priming research has shown that extremely complex knowledge structures, such as stereotypes and ideologies, can also be primed (Bargh, 2006). These knowledge structures are somewhat coherent mental models or schemas used to understand situations. Roskos-
Ewoldsen et al. (2002) overlook that priming takes place at different levels of processing, in a fractal way.

The best media priming model currently available in the literature that uses a coherent framework to understand a variety of media effects is the one proposed by Price and Tewksbury (1997). Price and Tewksbury merge in their model several findings from cognitive and social psychology creating a network model useful to explain framing, agenda setting, cultivation, and priming effects. The model has three main assumptions: first, knowledge and goals, values, and motivations are mentally stored in nonhierarchical networks; second, because humans are cognitive misers, only parts of the knowledge storage or long-term memory can be simultaneously activated in working memory or active thought; and, third, the activation of a cognitive unit increases the probability of its network associates of being also activated. The activation of a cognitive unit depends on its current activation level, on its current accessibility due to recent and/or frequent priming, and on its applicability –defined as the overlap of features between prime and target– to the current processing of stimuli. The use of the activated cognitive units in active thought is not automatic and interacts with individuals’ personal characteristics. There are two routes for an element to be salient in the environment or media message: the stimulus per se has some characteristics that make it salient or the individual’s goals and motivations perceive a feature as salient. Saliency influences which cognitive representations become active, i.e. what is brought to focal awareness. Assimilation and contrast depend on individuals’ awareness of a perceived irrelevant influence. Priming is defined as accessibility effects, and agenda-setting an effect subordinate to priming. Framing is considered an applicability effect, while cultivation results from the cumulative effects of chronically accessing a construct.

While this model clearly delineates how a construct becomes activated and used in active thought due to spreading activation, chronic accessibility, and applicability affecting the current processing of stimuli, the mechanisms behind assimilation and contrast are not explicitly explained. In addition, it is not clear how two constructs can be taken to active thought and remain as two independent cognitive units, allowing a comparison between the two. This conscious or unconscious comparison must take place in order to assimilate or contrast the prime and the target. Finally, the model does not focus on the context of the media message as a potential source of primes, but on the amount and saliency of the information.

Another good context effects model is Lodge and Taber’s (2007; 2013) John Q. Public model, which recognizes that individuals use a mental structure of political beliefs, intentions, and attitudes
which are associated in memory and activated in the moment they are needed to make a judgment, which is called hot-cognition. Activations depend on the processing on recent and frequent stimuli. As with Price and Tewksbury (1997), I agree with most of their premises. However, the way they conceptualize affect could be troublesome in a network model for context effects. In their model, affect is operationalized as independent from linguistic and semantic structures and it is just represented in a few nodes. Based on some experimental findings from cognitive psychology in which researchers found that participants were able to detect negative words faster than positive ones, they argue that there is a disjuncture between semantic and affective processing (Lodge & Taber, 2007, p. 24). They say that participants could not give synonyms for the words they detected during the subliminal priming experiment but they were able to recognize its valence. However, recognizing the valence of negative words implies that they are somewhat connected to semantic structures. Their model also does not make clear how assimilation and contrast take place and, while they differentiate conscious from unconscious thinking, they do not explain if conscious processing differs from the unconscious processing in individuals’ associative structures.

The network model proposed in the following section follows several of the propositions of Price and Tewksbury’s (1997) and Lodge and Taber’s (2007; 2013) models and it is highly compatible with them, but it incorporates assimilation and contrast effects as well as some theoretical concepts and current findings in cognitive and social psychology that they did not include to explain the context effects generated by news juxtaposition.

A Network Model of Context Effects of News Juxtaposition

The model focuses on the effects produced when two stimuli are spatially juxtaposed, but the ideas presented in the model can be generalized to other scenarios. For this, I first present the main assumptions of the model and define relevant concepts. Then, I describe the structure of the model. After this, I theorize how assimilation and contrast take place. Finally, an example is used to understand how the model deals with the processing of primes and targets and their mutual cognitive influence.

Assumptions

\footnote{For a previous version of this model, see Goya-Martinez (2012b).}
The model has four main related assumptions derived from connectionist theories about semantic memory, mental representations, and evaluations.

1. **Semantic memory is supported by a networked structure.**
   All the acquired semantic knowledge about concepts, objects, their meanings, their properties, their relationships, and their contexts, as well as their combinations in schemas and knowledge structures, is cognitively stored in a networked structure. Hierarchical and non-hierarchical connections among nodes are established gradually and through experience and represent semantic (e.g. tiger and lion) and/or contextual (e.g. cookies and coffee) relationships between nodes. When a node is activated, either by internal or external sources, it spreads its activation to the nodes to which it is positively connected and inhibits the activation of the nodes to which it is negatively connected. Excited nodes also spread their activation to their network associates; inhibited nodes do not propagate their influence to other nodes. The activation level of the sending unit and the weight of the connection determine how much a node is excited or inhibited. In addition, after being activated, the activation of a node decays gradually. This residual activation allows keeping things in mind during the processing of subsequent stimuli (e.g. the words of a sentence remain activated in the network until the last word of the sentence is read) and, therefore, it also allows priming to take place.

2. **Affect and emotion are also represented by nodes in a network structure.**
   While affect and emotion can anatomically be in different brain regions than semantic and linguistic processing, they are represented through nodes, their connections, and the weight and valence of those connections, in the network. The nodes of these networks are, as all nodes in the system, activated by other nodes through spreading activation. They participate with other networks in the system to generate a cognitive output.

3. **The cognitive representation of complex constructs is distributed and it is formed on the fly.**
   The same unit can participate in the representation of several entities. For instance, a unit representing the characteristic “furry” might be activated in the representation of several mammals and a unit representing a letter might be activated in the representation of a variety of different words (e.g. “c” in can and cat). Thus, the more complex is a cognitive unit, the more nodes participate in its representation. The more similar two entities are, the more overlap exists among the nodes that represent each of them. In addition, mental representations are not fixed in the mind, but rather they are made on the fly. In other words, the representation of an entity does not involve the same pattern of activation in the network each time. A cat might
be represented as a furry four-legged mammal that meows or as a feline animal with claws that likes to scratch furniture. Even when both sets of connected units represent a cat, they correspond to two different patterns of activation that represent different features of the animal. Which units are activated in a specific moment to represent an entity depends on their activation levels and the particular context that could be priming some features and not others. This assumption is particularly interesting in the case of framing effects. Each frame calls to mind different features of a problem and, therefore, a different pattern of activation in the network. The same issue can be represented very differently depending on the nodes activated at the moment. In this way, frames affect the units that participate in representing an event or actor. As explained in a previous section, distributed representations make the system vulnerable to noise and contamination since “a change in the state of just one unit... will change what is being represented” (Houghton, 2005, p. 15).

4. **Humans are cognitive miser and, therefore, evaluations are relative.**

Following previous theorists and models, this model assumes that individuals do not make an exhaustive search when making a judgment. Instead individuals usually rely on the representations most recently and frequently used, which are the ones with highest activation in the network, to make an evaluation. Since mental representations are distributed and made on the fly, individuals’ reactions to stimuli depend on the particular representation of an entity in a given situation; the mind will use the most salient units in the network, that is, the most activated ones.

Four concepts have an important role in the model: motivation, applicability, relevance, and priming.

**Motivation.** Price and Tewksbury (1997) recognize the importance of individuals’ motivations, interests, goals, and objectives as mediators of effects upon the activation and the accessibility of cognitive units. These constructs are stored along other cognitive units in an individuals’ knowledge store. In this model, motivations, goals, interests, and objectives —i.e., things considered important by the individual— are stored in the semantic network as motivated-nodes. These nodes are influenced by affective and emotional nodes in the network.

Two characteristics differentiate motivated-nodes from others: their activation rule and their connections. Since motivated-nodes represent what is important for an individual, they have a mechanism that allows them to retain a minimum level of activation despite being inhibited by other nodes. In this way, once a motivated-node has been activated, its activation level cannot be inhibited
below its particular threshold. Thresholds among motivated-nodes are not uniform and depend on the level of importance assigned by the individual. The more important is the construct, the higher its minimum activation is once it has been already activated. Motivated-nodes achieve this minimum activation level through a connection to themselves. The activation rule that controls the flow of activation from a motivated-node to itself is conditional: if a motivated-node’s activation level has not reached its minimum threshold, then it re-sends the activation to itself until the threshold is reached or surpassed. Then, its activation level decays gradually. Thus, the re-sending mechanism is only activated when the motivated-node suffers inhibitory discrete shocks from other nodes that leave its activation level below the minimum threshold. Motivated-nodes can become chronically activated if they have been primed very frequently. Motivation, as priming (see below), operates in a fractal way at different levels of processing: simple nodes, which participate in defining the meaning of more complex nodes, as well as complex nodes, can be motivated.

The task of motivated-nodes is to keep a minimum activation level once they have been activated. This allows individuals to direct attention resources according to their motivations and goals, to mitigate or overcorrect priming influences, and, therefore, to work as a mechanism to reduce and, in some cases, even to prevent assimilation effects. When two primed representations are in conflict, motivated-nodes influence which of the priming influences wins. For instance, while the personality trait ‘hostility’ might be primed, if the target person is a loved one, by matter of being represented by motivated-nodes, its minimum activation level might overcome or reduce assimilation effects, and therefore the reaction of the individual to the loved person would be less hostile than toward an unknown subject, whose representation does not include motivated-nodes.

There are two kinds of motivated-nodes, those which are always motivated and others whose motivation is conditional. The motivation of conditionally-motivated-nodes is accomplished through a conditional activation rule that establishes that only if the node receives activation from certain nodes, its re-sending mechanism will be activated. For instance, let’s suppose that the construct family is always motivated but that the motivation of one’s nationality is conditional. Then, if these nodes are inhibited below their minimum activation level, the node standing for family will always activate its re-sending mechanism, while the node standing for one’s nationality would only re-send its activation if certain nodes (such as the national soccer team) are included in its representation. The nodes included in the conditional rules of conditional-motivated-nodes change from individual to individual, according to their motivations and personal experiences.
Applicability and Relevance. According to previous models, whether an activated mental construct is used to process a target stimulus or not depends on its applicability. Applicability has been defined in three related ways. Higgins and Brendl (1995) define applicability as an overlap between the features of prime and target; the greater the overlap, the greater is the applicability of the former to the latter’s processing. Price and Tewksbury (1997) use the previous definition and add that the effect of frames consists on altering constructs’ applicability, since they suggest that certain constructs are applicable for understanding a particular event or actor (also see Scheufele & Tewksbury, 2007). In addition, an applicable construct has a higher probability of being activated and used in further processing. Finally, Schwarz and Bless (2005) and Mussweiler (2007) suggest that applicability fosters assimilation, which is described as a positive similarity testing.

While applicability is a powerful concept in the sense that totally unrelated constructs would not interfere with one another’s processing, it focuses only on priming effects motivated by the overlapping of features between prime and target. What about the effects induced by primes whose representational units do not overlap with the target’s ones but that they have mutual connections? A simple example would be the combination of black and white in a picture. While it is not likely that the representational units of both colors’ overlap, the appearance of both colors together affects their perception. In this sense, applicability ignores the amount of positive and negative connections between prime’s and target’s representational units. The units of prime and target might not overlap with each other but prime’s nodes might inhibit or excite target’s nodes affecting its processing; hence, the concept of applicability does not capture this interaction between mental representations. A different term, which can be called relevance, is needed to describe such interaction. Relevance focuses not on a great overlap among constructs’ representations, but rather on a great number of positive and/or negative connections between the mental representations of prime and target.

Priming. The model uses the traditional definition of priming, which is the temporal activation of cognitive units and their effect in the processing of subsequent stimuli. In addition, the model assumes that priming operates in a fractal way. That is to say, priming effects occur in parallel at different levels of processing, causing a variety of effects, all of them operating through a similar mechanism. For instance, at the same time that semantic priming might occur facilitating and speeding up the recognition of words and letters during reading, evaluating priming might take place in which the juxtaposed articles affect each others’ evaluations, and affective priming might derive from the content of the news articles suggesting a specific mood or emotional reaction toward them. This description of
priming goes in line with research findings that show that the same prime has a variety of effects and that the effects found depend mostly on the dependent variable measured by the experimenter (Bargh, 2006). Priming takes place in bottom-up and top-down tasks, facilitating or hindering processing in the former and contaminating processing in the latter. Priming takes place in conscious and unconscious processing—sometimes simultaneously—since both occur through spreading activation. But, while in conscious processing the individual actively searches for or makes explicit connections among representations and can be aware of the priming influence, in the latter the individual is not aware of the priming effect. While many priming effects take place at the same time, not all potential primes generate priming effects. Selective attention, current goals, and motivations filter the amount of primes and greatly reduce their possible influences. Priming is also assumed to be the main mechanism behind context effects.

*Model Structure: Three Modules, Four Layers.*

The model is structured in three modules,—semantic, affective, and evaluative—, which correspond to four layers in the network. Semantic, affective, and evaluative mental representations are separated in three modules inspired by the fact that semantic processing and social judgments are performed by different brain regions54. Semantic processing is divided in two layers: the lower semantic layer performs basic semantic processing identifying simple features and entities, and the higher semantic layer categorizes patterns of activations from the lower semantic layer and semantically codifies activations from the affective module. The higher semantic layer contains complex nodes that stand for complex constructs, whose particular representation depends on the simple activated nodes from the lower semantic and the affective layers positively connected to them. Then, nodes from the higher semantic layer spread their activation to the evaluative layer, which produces the output of the network (i.e., an evaluation judgment). Affective nodes might have some shortcuts to the evaluative layer as in the case of threatening stimuli. Nodes in the network have continuous activation levels, allowing the partial activation of nodes, their inhibition below their resting level (i.e., negative activation level), and a gradual decay of activation.

*Lower semantic layer.* Nodes from this layer have internal excitatory and inhibitory bidirectional ties, and bidirectional ties with nodes from the higher semantic layer. The task of this layer is to get the

basic meaning of stimuli. These nodes are simple in the sense that they are used to define, according to the context and the stimulus information, the meaning of constructs represented by complex nodes in the higher semantic layer. This layer also contains motivated-nodes.

**Higher semantic layer.** Bidirectional ties from nodes from the lower semantic and the affective layers connect the higher semantic to the other two layers. Nodes in the higher semantic layer have excitatory and inhibitory bidirectional ties with members of the same layer. The task of this layer is to categorize the event or item already processed by the lower layer. This is accomplished through the interaction between both layers. Since mental representations are distributed and formed on the fly, a node referring to a particular construct in the higher semantic layer acquires its meaning through the activated nodes from the lower semantic layer positively connected to it. If a simple node from the lower layer is not activated or if its activation level is low, it does not participate in defining the particular construct in the higher layer. The activation level of a node representing a construct identifies the extremeness or typicality of the exemplar. This layer contains motivated and conditionally-motivated-nodes.

Most priming contamination, driven by excitatory and inhibitory connections, takes place in the higher semantic layer. If two stimuli are perceived together, the one that has more motivated and chronically accessible nodes in its distributed mental representation takes the role of prime and the other takes the role of target. Mental representations are negotiated: even if the prime influences more the representation of the target than vice versa, the influence is not unidirectional but mutual. The high activation generated by motivated-nodes, that represent what is important for an individual, and chronically activated nodes determines whether a stimulus becomes a prime or a target, rather than the order in which the two stimuli are perceived (this is a consequence of how the model defines motivated-nodes). However, being processed first does increase the likelihood of a stimulus of becoming a prime. Prime is defined in this context as the most influential stimulus in a pair of stimuli. The order in which stimuli are perceived, however, determines whose cognitive units influence first the other stimulus’ nodes. Thus, according to eye-tracking studies\(^5\), the stimulus positioned at the top left would be processed first in most cases.

**Affective layer.** This layer has bidirectional ties with the semantic module and, especially, with their motivated nodes. A few of its nodes can also spread their activation to the evaluative layer through

shortcut connections but they only reach it if the activation is really high, as in the case of threatening stimuli in which—in terms of evolution—individuals' reaction to stimuli has to be fast.

_Evaluative layer._ The evaluative layer is composed of several independent sets of identical nodes called _graders_. The number of grader in an individual’s cognitive system depends on her memory capacity, span of attention, and experience. All grader are identical in terms of the nodes they contain, their internal connections within the set, and their external connections with the nodes from the higher semantic layer. The modeling of the grader as identical allows an individual to compare two or more things at the same time, and to keep the output of their cognitive processing separated after contamination. The connections of each of the grader with the higher semantic layer are temporarily fixed. This means that all the nodes activated by the first stimulus open a pathway to grader 1; then, all the nodes activated by the second stimulus open a pathway to grader 2, and so on. These pathways remain open until the evaluation is finished or no longer desired, allowing therefore for contamination. Graders work in parallel, maintaining their activation levels until the end of the comparison, which is made once the activation levels of all grader become stable. In order to be independent from each other, there are no connections between nodes from different grader. Nodes from each grader have internal bidirectional inhibitory connections; mutually exclusive nodes cannot be equally activated at the same time, rather their activation levels have to be inversely proportional to each other unless both are turned off. For instance, the nodes representing ‘beauty’ and ‘ugliness’ within the same grader cannot be completely activated at the same time and their activation levels have to maintain an equilibrium that is accomplished through their mutual inhibitory connections. In this way, if two opposite nodes from the same grader are activated by nodes from the higher semantic layer, the one that received more activation maintains a higher activation than its opposite node throughout the evaluation process. The activation level of each node determines the extremeness or the degree of the evaluation (e.g. the level of importance, the level of beauty, etc.). Figure 1 shows the structure of the model.

_Effects_

The model’s assumptions and structure allow two main priming effects to take place: assimilation and contrast.
Assimilation. Assimilation is, by far, the most common priming effect found in the literature. As explained in the previous chapter, assimilation takes place when the evaluation of the target and the prime move closer together. Therefore, assimilation is operationalized here as a shorter distance between prime’s and target’s evaluations when they are jointly evaluated than when they are evaluated separately. In light of all previous findings, assimilation appears in the model as a default operation in evaluation tasks and it is considered—when compared to contrast—the mental operation that requires less effort, less attention, and the least energy consumption; i.e., it is the process that excites and inhibits the least number of nodes. This idea is based on research on neural priming that shows through functional neuroimaging how individuals’ blood flow to certain brain regions diminishes with repetition priming (Habib, 2001), which is a clear case of facilitation due to assimilation. In addition, priming
research on amnesic patients has shown that while conscious recall—which according to previous research (e.g., Lombardi, Higgins, & Bargh, 1987) is one of the factors that reduces the likelihood of assimilation effects—implies high cortical activity, repetition priming causes a decrease in cortical activity (Schacter, Dobbins, & Schnyer, 2004).

Prime’s nodes dominate the activation in the network contaminating, therefore, the processing of the target stimulus. The nodes with higher activation are then easily used to process subsequent stimuli. To stop this default processing operation requires energy, attention, and effort from the individual. Assimilation is, therefore, a post-conscious automatic process (Bargh, 1989) since, even when it requires some form of conscious processing, as when paying attention to prime and target, it produces an unintended outcome influenced by unconscious processing, in which the individual almost effortlessly processes the stimulus. If evaluative priming—which is related to contamination—works similar to conceptual priming—which speeds up or slows down processing—, assimilation should be a faster process than contrast.

Contrast. If assimilation is the default outcome of priming effects, contrast is considered a process that stops or reduces assimilation. Assimilation has been found to be interrupted or prevented in some circumstances: awareness of the prime’s influence, expert knowledge, and extreme exemplars. The distance between prime’s and target’s evaluations becomes larger when they share context than if evaluated separately. Since contrast requires more attention and effort, consuming more energy of the individual, it is not a surprise that there are far more assimilation than contrast effects. Consequently, in opposition to assimilation, contrast should require more blood flow and more cortical activity, which implies a more conscious and less automatic response to stimuli.

Another possible outcome, barely proposed by a few authors in the literature\textsuperscript{56}, is for the two effects to take place simultaneously. While this might be happening at the level of processing, results would only show assimilation or contrast. To prove that assimilation and contrast might be taking place simultaneously (what could be called an assimilated-contrast), the results of a priming experiment would have to show that, in some cases, the ranking orders of a pair of stimuli that were evaluated separately switch when they are evaluated jointly.

Mechanisms behind the effects. The process starts as soon as the first stimulus is perceived. The nodes representing the first stimulus in the semantic and affective modules activate and start to spread

\textsuperscript{56} E.g., Tanner (2008) and Wanke and Kutzner (2002).
their activation to their negative and positive associates inhibiting and exciting them accordingly. The influence of these nodes on their associates depends on several factors: their activation level, the weight of the connection between them, and the activation rule that the receiving node uses to transform the net input received. The higher the activation of the sending node, the higher is its influence on the receiving node. Simple nodes from the lower semantic and affective layers start defining the meaning of complex nodes by spreading their activation to the higher semantic layer. All the nodes related to the first stimulus in the higher semantic layer generate a fixed temporary activation pattern that opens a pathway to grader 1 in the evaluative layer. Then, with a particular activation and inhibition state of the nodes in the network, the second stimulus is perceived. If some of the nodes of the second stimulus were already excited by the nodes of the first stimulus, since we are cognitive misers and representations are formed on the fly, their probability of being used in the processing of the second stimulus becomes higher. The representation of the second stimulus will include these partially activated nodes and some others until they are able to represent it. Similarly, if some of the nodes usually used to represent the second stimulus were inhibited by the nodes from the first stimulus, they will have a lower probability of being included in the representation of the former, unless they are motivated-nodes. If motivated-nodes were inhibited below their resting level, their activation is then lower than their minimum threshold and their self-connection would re-send the activation until the minimum activation level is reached. The fixed temporary pattern of activation corresponding to the second stimulus opens a pathway to grader 2. Both pathways from the semantic module to the evaluative layer will remain open allowing for contamination, but keeping the activation patterns of each stimulus differentiated in each grader, until the evaluation is finished.

As previously explained, the stimulus whose representation has more motivated- and chronically activated nodes has a higher probability of becoming the prime and this probability increases if it was perceived first. This is because motivated, chronically accessible, and recently accessed nodes usually have high activation once activated and the nodes with highest activation have more influence during the processing since they send more energy to inhibit and to excite than nodes with moderate or little activation. The more important a construct is considered, the higher the minimum activation threshold of its representational nodes is. In addition, motivated-nodes represent what is important to the individual (i.e. her goals, motivations, objectives, etc.) and therefore influence the nodes representing ‘importance’ in the evaluative layer.
The stimulus whose representational nodes have a higher activation level (usually the one that has more chronically activated and motivated nodes) becomes the prime. In the negotiation of the representations of prime and target, the prime pulls more the evaluation of the target stimulus toward its own evaluation than vice versa, through excitatory and inhibitory mechanisms. However, target’s nodes also try to inhibit and excite prime’s nodes to pull it toward the target’s evaluation. Since the activation level of most target’s nodes is lower than the activation level of most prime’s nodes, the influence of the target over the prime is lower than vice versa. Nonetheless, the target reduces a little bit the prime’s importance level. If a motivated-node (be it from the prime or the target) is inhibited but not below its activation threshold, then the activation it can send to the evaluative layer diminishes reducing the stimulus’ evaluation in terms of importance, just as any other node. In the output of the network, prime’s and target’s evaluation are closer together than in the no-prime condition. Prime and target appear more similar when evaluated together than when separately evaluated. The result of this processing is therefore assimilation. The most simple form of assimilation is when there is applicability (or in social comparison theory terms, a positive similarity test) between prime and target. Since they share many nodes, less inhibitory and excitatory mechanisms are activated. In this way, applicability is not a necessary condition for assimilation to take place, as modeled by Schwarz and Bless (2007) and Mussweiler (2007), but it makes stimuli more prone to assimilation than relevance.

Sometimes, however, assimilation is prevented or reduced causing contrast effects. Motivated-nodes are largely responsible for these anti-assimilation effects. If a motivated-node is inhibited below its minimum activation level then it re-sends its activation until reaching or, in most cases, surpassing its minimum threshold. To exemplify this, let’s arbitrarily suppose a motivated-node has a minimum activation threshold of 5 and that its activation level was inhibited to 3. The residual activation level of 3 is not enough to fulfill the minimum activation threshold and, therefore, the node re-sends the current activation to itself until it reaches its minimum activation level. Now, let’s also suppose that the motivated-node has a linear activation rule and, thus, the node would re-send the current activation of 3 reaching and, in this case, surpassing its threshold, which now would give it an activation level of 6. This would reverse the inhibition by exciting the motivated-node even more than before. Since this motivated-node has now a higher activation, it will excite more its positive associates in the evaluative layer, whose output would be a higher evaluation of the stimulus in terms of importance. The result of this processing is usually a contrast effect. If the over-excitation of a motivated-node produced by inhibition increases the importance level of the target stimulus surpassing the importance level of the prime, then the result would imply an assimilated-contrast effect. Contrasts and assimilated-contrasts
would be, in this way, anomalous assimilations. The processing that lies behind them is similar to assimilation but in which the re-sending mechanism of motivated-nodes prevents it. Since contrasts and assimilated-contrasts imply more activation, they would require more effort and energy than assimilations. Relevant rather than applicable representations are the least prone to assimilation effects.

For instance, let’s suppose we have two news stories, A and B, which received an importance evaluation of 5 and 2, respectively, on a scale from 1 to 7 when they were separately perceived. Now, they are spatially juxtaposed, article A at the left and B at the right, and re-evaluated. Since assimilation is the default response in the system, this is the effect that should be expected first. Since the news article A was evaluated as more important than the news story B when they were separately perceived and since in the juxtaposition was perceived first, it has a higher probability of becoming the prime in the pair. Since the news story A was highly evaluated, its mental representation probably includes more motivated-nodes than article B, which had a low evaluation. A pulls more B’s evaluation toward it than vice versa, but still B affects a little bit A. If B inhibits a little bit one or more of A’s motivated-nodes but not below their minimum threshold, then it will just reduce a little bit its importance level since these nodes reduced a little bit the activation they sent to the evaluative layer. In this scenario, A would finish the processing with a little bit lower and B with a higher evaluation in terms of importance. The distance between both evaluations is now shorter than in the no-prime condition. Thus, the result is assimilation. However, if B’s nodes inhibited A’s motivated-nodes below their minimum threshold, then they would re-send their activation over-activating themselves. Therefore, these over-activated motivated-nodes will send more activation to the evaluative layer improving their evaluation in terms of importance causing a contrast. This does not necessarily imply that the evaluation of B goes down, rather it means that the difference between both evaluations is larger when they are juxtaposed than when they are separately evaluated. If prime’s and target’s ranking orders are switched, the result would be an assimilated-contrast.

In conclusion, media alter the meaning and importance evaluation of a news event by placing other news stories adjacent to it. These contextual stimuli have the potential of affecting which nodes from the lower semantic and from the affective layers participate in the definition of the news event in the higher semantic layer; they also contaminate its evaluation by inhibiting and exciting its semantic representation, which determines the activation that is sent to graders in the evaluative layer. Since assimilation is the default response in the system, if the target news event is surrounded by important news articles, this juxtaposition could improve its evaluation. By contrast, if it is surrounded by less
important stories, its importance evaluation will probably deteriorate. In some cases, however, if nodes related to the contextual stimuli inhibit activated nodes representing important things for the individual (i.e., motivated-nodes), this assimilation could be reversed causing a contrast or an assimilated-contrast. The model and its predictions are taken into account in the discussion of the experimental results in Chapter VI.

More than a Context Effects Model

The objective of this model is to understand the context effects generated by news juxtaposition at the cognitive level. In opposition to previous models, this model provides a plausible explanation for assimilation and contrast effects within a connectionist framework. This model is compatible with and extends Price and Tewksbury’s model (1997) since at the same time that it follows their main principles and ideas, it also introduces new concepts such as motivated-nodes and relevance providing the basis for assimilation and contrast to take place. The graders in the evaluative layer and the fixed temporary patterns of stimuli allow, at the same time, contamination and a separation of the stimuli at the output level. In this way, the model allows individuals to make comparisons among stimuli spatially co-occurring in the same context. In addition, though not proposed in the model, some circumstances usually found to cause contrast can also be explained through it. For instance, since the extremeness of constructs in the higher semantic layer is expressed through their activation levels, the more extreme the construct the higher is its inhibitory influence in motivated-nodes, which increases their probability of activating their re-sending mechanism fostering contrast. Expert knowledge, another variable that has been found to be related to contrast effects, could be represented through motivated-nodes—which prevent or reduce assimilation—since individuals are usually experts in things they are really interested in.

While the model explicitly addresses context effects due to news juxtaposition, it can be applied to a variety of juxtaposed stimuli and it gives elements to explain other cognitive media effects such as framing and agenda setting. On the one hand, framing is clearly related to the assumption that representations are formed on the fly and that the representation of stimuli is distributed and not local. In this way, frames affect which nodes are included in the representation of an event, and therefore define its characteristics at the cognitive level. Therefore, framing effects take place in the interaction between the lower and the higher semantic layer. The frame affects which constructs are activated in the higher semantic layer and which simple nodes from the lower layer define their meaning. On the
other hand, agenda setting, agreeing with Price and Tewksbury (1997), could be explained by the model as media influences in the chronic accessibility of a construct in the higher semantic layer. Finally, the model provides a broader framework to address priming effects besides the limited trend of media priming in communication, in which priming is only understood as a process that alters the accessibility of criteria used to evaluate political candidates or as the activation of hostile concepts in the individual. Communication as a discipline should still explore diverse priming effects fostered by a variety of stimuli in diverse media.
CHAPTER V

METHOD

Objective
The main objective of this study is to analyze the effects of news juxtaposition on individuals’ judgments of news events in terms of their importance, interest, and potential participation (i.e. individuals’ willingness to participate in an event). By doing this, the present study fills several gaps in the literature. First, in contrast to the few previous studies on juxtaposition that analyze the effects of ads in the perception of news, this study focuses on how a news story affects the perception of adjacent news stories, increasing our understanding of the processing of adjacent messages and their mutual influence in mental representation. This also allows for the testing of Berger’s (1982) and Postman’s (1985) intuitions regarding the juxtaposition of tragic and trivial content using data obtained from an experiment. Second, this study contributes to the theoretical analysis of the phenomenon of juxtaposition through the development of a network priming model. The results of the experiment will provide some initial clues about the usability and applicability of the model. Third, the study fills a gap in political communication and media effects research because contexts have been mostly overlooked in these areas. Fourth, since this study also covers the effects of juxtaposition on tragic news, it fills a gap in the literature that focuses on the media coverage of disasters and catastrophes since –instead of analyzing media’s selection criteria and frames\textsuperscript{57}– it examines the way different news contexts affect individuals’ evaluations of tragic events. Finally, though priming and context effects research from psychology and advertising have used a variety of stimuli, authors almost never use news stories as prime and target stimuli. Therefore, this study will contribute to several areas of knowledge from communication and psychology.

Research Questions and Hypotheses
The research questions guiding this study are:

\textsuperscript{57} E.g., Singer, Endreny, and Glassman (1991) and Van Belle (2000).
RQ1: Is a news event evaluated differently in terms of importance, interest, and potential participation when it is presented with and without an adjacent news item (i.e. with and without a spatial prime)?

RQ2: Is a type of news story evaluated differently in terms of importance, interest, and potential participation when it is juxtaposed with different types of news stories (i.e. different priming conditions)?

RQ3: Testing Berger’s (1982) and Postman’s (1985) intuitions, does the juxtaposition of tragic and trivial news stories trivialize the former?

RQ4: If any effects are found, which forms of juxtaposition foster assimilation and which ones contrast?

From previous studies, it can be hypothesized that the answers to RQ1 and RQ2 are affirmative. As explained above, context has been demonstrated to affect individuals’ interpretation, perception, evaluation, and recall rates in several kinds of stimuli, from visual images and ads to voting and decision-making. Those effects have also been demonstrated when news and ads are juxtaposed. There is no reason to think that the same effects will not take place on news juxtaposition. Therefore, the following hypotheses are formulated:

H1- A news item will be judged differently when evaluated in isolation (without a spatial prime) than when it is juxtaposed with an adjacent news story (with a spatial prime), in terms of:

H1a: importance
H1b: interest
H1c: individuals’ potential participation

H2- Each of the news content categories will have different context effects in different priming conditions in

H2a: importance judgments
H2b: interest judgments
H2c: potential participation judgments

H3 - The judgment of each news content category will be affected differently depending on the content category of the news item spatially juxtaposed with it.

These three sets of hypotheses test if there are context effects due to news juxtaposition (H1); if content categories are differently evaluated in different priming conditions, i.e., if the percentage of each kind of effects for each content category changes in different priming conditions (H2); and, if
exemplars of a content category receive different evaluations in different priming conditions (H3). H1 can be answered by analyzing whether articles’ evaluations change when they are evaluated without and with a spatial prime. H2 can be answered by comparing the percentage of each kind of effect that takes place when a particular content category is juxtaposed with the same or other content categories. Finally, H3 can be solved by looking at the average evaluations from individual exemplars of a particular content category in different priming conditions (when repeated across priming conditions).

Regarding RQ3, Berger (1982) and Postman (1985) predict that the mixture of trivial news stories and human tragedies causes trivialization. To support their hypothesis, individuals’ importance judgments of tragic events would have to be lower when juxtaposed with trivial news stories than when they are paired with serious or other tragic stories. This hypothesis goes against the network model (see Chapter IV), which predicts a higher probability of contrast and a lower probability of assimilation when an important issue –mentally represented through motivated-nodes– is spatially juxtaposed with a non-important item. Regarding RQ4, taking into account previous findings regarding assimilation and contrast effects, I expect that when prime and target have similar content, i.e. belong to the same content category, an assimilation effect will take place. By contrast, if prime and target belong to different content categories, I expect the likelihood of assimilation effects to diminish. In addition, advertising literature on context effects suggests that individuals have different reactions when there is emotional congruity between prime and target than when there is a disruption between them. Emotional congruity fosters assimilation, whereas emotional disruption promotes contrast. Hence, it is reasonable to expect that the juxtaposition of stories that have similar content or that provide some sort of emotional congruity would foster assimilation, whereas the combination of stories that have different emotional content or importance level would promote contrast.

Therefore, the following hypotheses are formulated:

H4: The juxtaposition of trivial and tragic news stories fosters assimilation.

H4a: Tragic news stories have a higher percentage of assimilations when they are juxtaposed with trivial news stories than when they are juxtaposed with articles from other content categories tested in this study.

H4b: Tragic articles present larger assimilation effects when they are juxtaposed with trivial news stories than when they are juxtaposed with articles from other content categories tested in this study.

H5: Congruity fosters assimilation.

There is a higher percentage of cases of assimilation when there is congruity between prime and target than when there is incongruity.

H5a: in terms of content categories
H5b: in importance levels

Pairs in which news stories have congruity show larger mean assimilation effects than pairs in which there is no congruity between the news stories juxtaposed.

H5c: in terms of content categories
H5d: in importance levels

H6: Contrast effects are more likely to occur if there is disruption between prime and target than when there is no disruption, i.e.:

H6a: Contrast effects are more likely to occur when tragic and trivial content is juxtaposed than when tragic news items are juxtaposed with serious or other tragic items.
H6b: Contrast effects are more likely to occur when serious and trivial content is juxtaposed than when serious items are juxtaposed with other serious or tragic items.
H6c: Contrast effects are more likely to occur when items with different importance levels are juxtaposed than when the items have similar importance levels.

To answer some of these hypotheses, the percentage of the number of cases in each of the effects in all the observations in the experiment (pairs of news stories evaluated) will be used as a standard for comparison. Therefore, if a particular combination of content categories or importance levels shows a percentage of assimilated or contrasted cases that differs from the overall distribution of these effects in the sample, it can signal whether that combination is more prone to assimilation or contrast effects than other combinations.

Experiment Summary

Following the method most commonly used in priming and context effects research from psychology and advertising, an experiment was used to test these hypotheses. A mixed experimental designed was carried out at the University of Illinois at Urbana-Champaign. A between-subjects experiment compared the evaluations of two groups of participants who evaluated news articles without (no prime treatment) and with a spatial prime (prime treatment) where the same news articles were juxtaposed in pairs for
their evaluation. This allows comparing the rating of news items when they are evaluated without a spatial prime to when they are evaluated with a spatial prime. Then, a within-subjects design applied to the participants who received the prime treatment permits analyzing whether the average evaluations of exemplars of a particular content category or importance level change in different priming conditions. The between-subjects experimental design is useful to answer H1 and the within-subjects design tests H2, H3, H4, H5, and H6 for which the results of the between-subjects design serves as a reference to interpret the direction of the effects (assimilation versus contrast).

**Experimental Designs**

A between-subjects experimental design was used to compare how news items were evaluated in terms of importance, interest, and potential participation without and with a spatial prime. It was also used for classifying the stories according to their content and importance level. Two groups of participants received two different treatments. In the no-prime treatment, news stories were read one at a time, avoiding spatial juxtaposition. Participants read stories selected only from one news type (e.g., politics and economics, entertainment and sports, or homepage and world/international) to reduce possible emotional and/or content disruptions, and the order of the stories was randomized for each participant to eliminate any systematic influence of a particular news item over another. In this way, spatial priming was eliminated and temporal priming was reduced and controlled. In the prime treatment, a different group of participants read the same news stories spatially juxtaposed in pairs.

A within-subjects design, carried out with the group of participants who received the prime treatment, was used to compare how news items evaluations and content categories change in different priming conditions, i.e., when items are juxtaposed with exemplars from the same or another content category and with exemplars with a similar or different importance level.

**Participants.** 425 individuals participated in the experiment. The mean age of participants was 20 (SD=2.2) and 95% had finished or were carrying out their undergraduate studies. The majority of the participants (68%) were female, 60.6% identified themselves as white, and, though there are many international students, most of the sample (59%) consisted of U.S. citizens. The sample is heterogeneous in terms of major with individuals reporting more than 25 different majors, though 40% of the participants’ major is related to communication or media studies, 11% to political science, 9% to advertising and marketing, and almost 4% to psychology. From these 425 participants, thirty individuals
participated in the no-prime treatment of the between-subjects design. Ten of these participants received $9 for participating and twenty were volunteers. The rest of the individuals participated in the prime treatment of the between-subjects design and in the within-subjects experimental design. These participants, who were recruited from several communication, media, and psychology undergraduate courses, received an extra point or course credit for their participation in this study.

Materials and Measures. For the between-subjects experimental design, twenty news stories from major news websites (such as the New York Times, the Washington Post, Chicago Tribune, among others) were gathered from each of the following news sections: Politics and economics, entertainment and sports, and homepage and world/international – from these last sections only news articles about human catastrophes that involved ten or more people dead were chosen. Each of the sixty news articles was edited (by eliminating paragraphs or words, without altering the language used by their authors) to have a word count between 145 and 150 words; in this way, all articles had a similar word-count. Paid participants and volunteers were similarly distributed in evaluating the articles coming from each of the three sections of the news websites.

Participants in the no-prime treatment rated the content of the selected stories by answering six semantic differential terms (see Table 1). The objective was to classify news stories into three content categories: tragic (T), serious (S), and trivial (R). A tragic-happy scale was created by calculating a mean of participants’ answers to the following items: sad-happy, depressing-cheerful, and tragic-joyful (α=0.94). Similarly, a serious-trivial scale was created by calculating a mean of the answers to the items: dense-superficial, serious-trivial, and deep-shallow (α=0.93).

<table>
<thead>
<tr>
<th>1. Extremely happy</th>
<th>Very happy</th>
<th>Happy</th>
<th>Neutral</th>
<th>Sad</th>
<th>Very sad</th>
<th>Extremely sad</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Extremely dense</td>
<td>Very dense</td>
<td>Dense</td>
<td>Neutral</td>
<td>Superficial</td>
<td>Very superficial</td>
<td>Extremely superficial</td>
</tr>
<tr>
<td>3. Extremely joyful</td>
<td>Very joyful</td>
<td>Joyful</td>
<td>Neutral</td>
<td>Tragic</td>
<td>Very tragic</td>
<td>Extremely tragic</td>
</tr>
<tr>
<td>4. Extremely serious</td>
<td>Very serious</td>
<td>Serious</td>
<td>Neutral</td>
<td>Trivial</td>
<td>Very trivial</td>
<td>Extremely trivial</td>
</tr>
<tr>
<td>5. Extremely deep</td>
<td>Very deep</td>
<td>Deep</td>
<td>Neutral</td>
<td>Shallow</td>
<td>Very shallow</td>
<td>Extremely shallow</td>
</tr>
<tr>
<td>6. Extremely cheerful</td>
<td>Very cheerful</td>
<td>Cheerful</td>
<td>Neutral</td>
<td>Depressing</td>
<td>Very depressing</td>
<td>Extremely depressing</td>
</tr>
</tbody>
</table>

As expected, the stories that scored high in tragicness also scored high in seriousness because these are not mutually exclusive categories; most tragic stories are usually serious but not all serious
stories are tragic. For this reason, first, the twenty stories with the highest rating in tragicness were selected as tragic and, then, from the remaining stories, the twenty stories with highest score in seriousness were selected as serious. From the stories with highest rating in trivialness, only sixteen stories had a positive trivialness score. Table 2 shows the mean and standard deviations of news stories after classifying them into tragic, serious, and trivial by using the tragic-sad and serious-trivial scales. There were a total of 20 tragic (T), 20 serious (S), and 16 trivial (R) news stories. The headlines of the news exemplars from each content category appear in Appendix A.

Table 2. Semantic Differential Scores by Content Category of News Stories

<table>
<thead>
<tr>
<th>Content Category</th>
<th>Tragicness-Happiness Score (3, -3)</th>
<th>Seriousness-Trivialness Score (3, -3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tragic (n=20)</td>
<td>$\bar{X} = 1.67$ $SD = 0.27$</td>
<td>$\bar{X} = 1.10$ $SD = 0.24$</td>
</tr>
<tr>
<td>Serious (n=20)</td>
<td>$\bar{X} = 0.42$ $SD = 0.55$</td>
<td>$\bar{X} = 0.74$ $SD = 0.26$</td>
</tr>
<tr>
<td>Trivial (n=16)</td>
<td>$\bar{X} = 0.00$ $SD = 0.44$</td>
<td>$\bar{X} = -0.85$ $SD = 0.59$</td>
</tr>
</tbody>
</table>

Participants in both treatments in the between-subjects design, the no-prime treatment without a spatial prime and the prime treatment with the news items juxtaposed in pairs, rated the stories by answering 15 Likert scale statements with a seven point scale in which 7 referred to “Strongly agree” and 1 to “Strongly disagree”. These statements were used to obtain importance, interest, and potential participation scales for every news item. Five statements referred to each of the three judgment categories (Table 3), but in the case of the importance scale one item was left out since it had a lower correlation with the other items of the scale, reducing the reliability of the measure.

Using the answers obtained in the no-prime treatment for the importance scale, the 56 news stories classified into tragic (T), serious (S), and trivial (R) were also classified according to their importance level into high (H), medium (M), and low (L). The news article evaluated as most important received a score of 6.18 and the least important received a score of 1.06, in a scale from 1 to 7. News
stories rated 5 or above in importance were classified as high, those above 3 but below 5 as medium, and those below 3 as low. Table 4 shows the means and standard deviation of news stories in the three measures (importance, interest, and potential participation) according to their importance level.

Table 3. Likert Scale questions used for the Importance, Interest, and Potential Participation Scales.

| Importance (α=0.94) | I learned something significant by reading this article  
|                     | I think this topic should be covered on the news  
|                     | *This issue is trivial  
|                     | This theme is important  
|                     | People should pay attention to this topic  |
| Interest (α=0.91)   | I like to read about this topic  
|                     | I would like to read more about this topic  
|                     | I would like to know more about this issue  
|                     | **This topic is boring  
|                     | This topic is interesting  |
| Potential Participation (α=0.88) | I would participate in a chat or internet forum to discuss this issue  
|                                    | I would send a link to this article to my family/friends to inform them about it  
|                                    | I would give resources in favor of groups or organizations related to the event  
|                                    | I would persuade people to contribute money for this topic  
|                                    | I would write my local representative about this issue  |

*This item in its negative form was left out of the importance scale for reducing its reliability.  
**The answers to this item were reversed before including it in the scale.

For the prime-treatment of the between-subjects design, news stories were juxtaposed in pairs to get six possible combinations in terms of content categories (TT, TS/ST, TR/RT, SS, SR/RS, and RR). A total of 60 different pairs of news articles were randomly drawn using Excel’s random function, but making sure that all the news stories appeared at least once and that all the possible combinations of news stories according to their content category (TT, TS/ST, TR/RT, SS, SR/RS, and RR) were equally represented. In pairs in which two different categories were combined (TS, TR, and SR), half had the first category on the left side and half on the right side. All possible combinations of importance levels were represented in the sample (HH, HM/MH, HL/LH, MM, ML/LM, and LL); however, not all possible combinations of importance and category were represented simply because some of them did not exist in the news articles. For instance, none of the trivial news stories was evaluated as highly important and
none of the tragic stories received a low importance score. Hence, these combinations do not appear in the sample. Given that the sample was balanced with respect to content categories, it was not possible to balance it with respect to importance levels. Nevertheless, since the selection of pairs was completely randomly drawn, it is balanced and without biases.

Table 4. Descriptive Statistics of Dependent Measures of News Stories according to their Importance Level

<table>
<thead>
<tr>
<th>Importance Level</th>
<th>Importance</th>
<th>Interest</th>
<th>Potential Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High (n=23)</td>
<td>$\bar{X} = 5.38$ $SD = 0.34$</td>
<td>$\bar{X} = 5.07$ $SD = 0.45$</td>
<td>$\bar{X} = 2.62$ $SD = 0.84$</td>
</tr>
<tr>
<td>Medium (n=22)</td>
<td>$\bar{X} = 4.19$ $SD = 0.53$</td>
<td>$\bar{X} = 4.00$ $SD = 0.53$</td>
<td>$\bar{X} = 2.10$ $SD = 0.52$</td>
</tr>
<tr>
<td>Low (n=11)</td>
<td>$\bar{X} = 2.14$ $SD = 0.59$</td>
<td>$\bar{X} = 2.79$ $SD = 0.57$</td>
<td>$\bar{X} = 1.47$ $SD = 0.36$</td>
</tr>
</tbody>
</table>

Figure 2. Example of a Pair of News Stories Spatially Juxtaposed.

**Tanker Explosion Kills 100 in Kenya**

According to Kenyan officials, a tanker carrying high-grade gasoline overturned around 7 p.m. on Saturday, near the town of Molo, in the Rift Valley. As the gas began to splash out, word began to spread. Witnesses said that villagers swarmed the downed truck, siphoning fuel into plastic jerry cans. Young men on motorcycles raced in from miles away.

A handful of Kenyan police officers tried to drive them off, according to Kenyan officials, but the looters fought back. Witnesses said that one vindictive looter whom officers tried to push away lit a match and threw it into a pool of gasoline.

The explosion sent bodies flying into the woods and it could be heard for miles. The Kenya Red Cross said on Sunday afternoon that at least 113 people had been killed and another 178 severely burned. The surrounding hospitals were packed with writhing burn victims.

**Death toll in Thai nightclub rises to 64**

Thai police say the death toll in a New Year’s Eve nightclub fire has reached 64 after two of those injured died. More than 200 people were hurt in the blaze which happened in Bangkok. It’s thought the fire might have been caused by fireworks which were inside the club to mark the New Year. A full investigation will take place into what caused the tragedy.

There are reports that there were around 1,000 people inside the Santika club. The fire raced through the Santika Club, engulfing many in flames. Others died in a stampede as hundreds of revelers tried to escape through the club’s main door.

The hospital identified a Japanese man who had burns over more than 60 percent of his body. Police have said the owner of the Thai nightclub will face criminal charges over the blaze, which was likely sparked by a countdown fireworks display.
A survey website (surveymonkey.com) was used to set up the experimental material online. News pairs appeared spatially juxtaposed at the top of the screen; Likert scale statements (see Table 2) appeared below the news pairs. Articles at the left side of the screen had the letter “A” and articles at the right had the letter “B” above them. Then, in the Likert scale items, there was a space to introduce the evaluation of article “A” and article “B”. Figure 2 shows how participants saw the two news stories spatially juxtaposed on the screen.

Procedure. Each participant received a consent form, demographic questions, the material to be evaluated, and a thank you note. All news articles were presented in the same format and had a similar word-count. Participants spent between 30 to 40 minutes evaluating the material. In the prime-treatment of the between-subjects design, to direct participants to one of the ten possible combinations of six pairs of news stories, the last question in the demographic section asked participants for the last number of their telephone number. This strategy was used since the website could not accommodate pairs’ pages randomly.
CHAPTER VI

RESULTS AND DISCUSSION

Results from 2299 observations (graded pairs of news stories) show that there are significant context effects due to news juxtaposition in the three judgments tested (importance, individuals’ interest, and potential participation). Three kinds of effects were found: assimilation, contrast, and assimilated-contrast. Results show an overall trend toward assimilation.

In the between-subjects experiment, news items’ average evaluations are statistically different in the no-prime and prime treatments, as well as in different priming conditions in the within-subjects experiment confirming the set of hypotheses H1, H2, and H3. As opposed to Berger’s and Postman’s intuition, the juxtaposition of tragic with trivial stories does not foster assimilation, which refutes H4, but rather promotes contrast effects, which confirms H6. Pairs of news stories with congruent prime and target are more likely to be assimilated than those without congruity, which supports H5a and H5b. Nevertheless, the assimilation effect is larger for pairs without congruity, which goes against H5c and H5d. Finally, results also show that the importance level of the news item in the no-prime condition predicts better its role as prime or target than its left or right position in the prime condition, as eye-tracking findings would suggest.

H1: A news item will be judged differently when evaluated in isolation (without a spatial prime) than when it is juxtaposed with an adjacent news story (with a spatial prime).

To analyze if news items were evaluated differently in the no-prime and prime treatments in terms of importance (H1a), interest (H1b), and potential participation (H1c), the following steps were followed:

1. For each of the news items in each evaluated pair, the average of the importance, interest, and potential participation scales were calculated for both the no-prime and prime treatments.
2. The average calculated in the previous step for article B (article positioned at the right side of the screen in the prime treatment) was subtracted from that of article A (article positioned at the left side of the screen in the prime treatment) for each of the two treatments (no-prime and prime).
3. The previous step left two results for each article of each pair in each judgment: the subtraction of the average scores of articles A and B in the no-prime and prime treatments. The relationships between the absolute values of these differences were classified into three kinds of effects:
   a. Assimilation – when the difference between the average scores of articles A and B was larger in the no-prime than in the prime treatment. I.e., the evaluations of the articles moved closer when they appeared spatially juxtaposed.
   b. Contrast – when the difference between the average scores of articles A and B was larger in the prime than in the no-prime treatment. I.e., the average evaluations of the articles moved farther apart when they appeared spatially juxtaposed.
   c. Assimilated-Contrast – when the ranking orders of the average scores of articles A and B switched from the no-prime to the prime treatment. I.e., if article A’s average evaluation was greater than that of article B in the no-prime treatment, article A’s average evaluation became smaller than that of article B in the prime treatment, or vice-versa.

4. Effect size was calculated in two ways:
   a. By news item, the effect is calculated by measuring how much each news article’s average evaluation changed, in absolute value, from the no-prime to the prime treatment. (See Table 5).
   b. By pair, the size of the effect is calculated by subtracting the absolute difference of articles A’s and B’s average evaluation in the no-prime treatment from their absolute difference in the prime treatment. Notice that this way of measuring the effect size only works for assimilated and contrasted cases. In assimilated-contrast cases, the absolute values of articles A’s and B’s average evaluation in the no-prime and prime treatments have to be added since the ranking orders of their evaluations were switched from the no-prime to the prime treatment. (See Table 6).

5. The percentage of cases of each type of effect was also calculated for each of the judgments and for all the observations of the three judgments together (See Table 7).

6. Finally, the absolute values of the differences of articles A’s and B’s average scores in each of the scales for the no-prime and prime treatments (previously computed in step 2) were graphed in a scatter plot for each of the three judgments. The X axis corresponds to the no-prime treatment and the Y axis corresponds to the prime treatment. Each point in the graph is labeled according
to the content category of each article in the pair (e.g., TT, TR/RT, etc.). The dotted line (45°) shows how the linear trend should be if there were no effects. Any observation above the dotted line indicates contrast effects—when the difference between the average evaluations of articles A and B is larger with than without prime—, and below assimilation effects—when the difference in the average evaluation ratings between article A and B is larger without than with prime. This was necessary to visualize if there were changes in the evaluation scores of news articles due to their spatial juxtaposition in pairs. Notice that in the cases where the ranking orders of the average evaluations are switched, i.e., an assimilation-contrast, the absolute values do not reflect this effect; therefore, these cases were analyzed separately and omitted from the graphs.

7. The fitted values resulting from a simple linear regression with a constant and the no-prime differences as the independent variable and the prime differences as the dependent variable were superimposed in each graph (solid line). The estimated coefficients, R² values, and a test to determine if the fitted line is significantly different from the 45° line (i.e., if there were significant context effects due to spatial juxtaposition) were computed. The results of these steps are shown below in Table 8 and in the graphs of Figures 3, 4, and 5.

Table 5. Descriptive Statistics of Effect Size by News Item in each Judgment by Type of Effect.

<table>
<thead>
<tr>
<th>Effect size</th>
<th>Assimilation</th>
<th>Contrast</th>
<th>Assimilated-Contrasts</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance</td>
<td>$\bar{x} = 0.62$</td>
<td>$\bar{x} = 0.62$</td>
<td>$\bar{x} = 0.55$</td>
<td>$\bar{x} = 0.60$</td>
</tr>
<tr>
<td></td>
<td>$SD = 0.43$</td>
<td>$SD = 0.38$</td>
<td>$SD = 0.45$</td>
<td>$SD = 0.43$</td>
</tr>
<tr>
<td>Interest</td>
<td>$\bar{x} = 0.64$</td>
<td>$\bar{x} = 0.78$</td>
<td>$\bar{x} = 0.73$</td>
<td>$\bar{x} = 0.68$</td>
</tr>
<tr>
<td></td>
<td>$SD = 0.42$</td>
<td>$SD = 0.61$</td>
<td>$SD = 0.40$</td>
<td>$SD = 0.46$</td>
</tr>
<tr>
<td>Participation</td>
<td>$\bar{x} = 0.76$</td>
<td>$\bar{x} = 0.81$</td>
<td>$\bar{x} = 0.96$</td>
<td>$\bar{x} = 0.81$</td>
</tr>
<tr>
<td></td>
<td>$SD = 0.50$</td>
<td>$SD = 0.47$</td>
<td>$SD = 0.60$</td>
<td>$SD = 0.51$</td>
</tr>
<tr>
<td>Overall</td>
<td>$\bar{x} = 0.67$</td>
<td>$\bar{x} = 0.71$</td>
<td>$\bar{x} = 0.79$</td>
<td>$\bar{x} = 0.70$</td>
</tr>
<tr>
<td></td>
<td>$SD = 0.45$</td>
<td>$SD = 0.51$</td>
<td>$SD = 0.49$</td>
<td>$SD = 0.47$</td>
</tr>
</tbody>
</table>
Table 6. Descriptive Statistics of Effect Size by Pair in each Judgment by Type of Effect.

<table>
<thead>
<tr>
<th>Effect size</th>
<th>Assimilation</th>
<th>Contrast</th>
<th>Assimilated-Contrasts</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance</td>
<td>$\bar{x} = 0.75$</td>
<td>$\bar{x} = 0.77$</td>
<td>$\bar{x} = 0.73$</td>
<td>$\bar{x} = 0.76$</td>
</tr>
<tr>
<td></td>
<td>$SD = 0.57$</td>
<td>$SD = 0.57$</td>
<td>$SD = 0.72$</td>
<td>$SD = 0.58$</td>
</tr>
<tr>
<td>Interest</td>
<td>$\bar{x} = 0.90$</td>
<td>$\bar{x} = 0.43$</td>
<td>$\bar{x} = 1.37$</td>
<td>$\bar{x} = 0.89$</td>
</tr>
<tr>
<td></td>
<td>$SD = 0.68$</td>
<td>$SD = 0.44$</td>
<td>$SD = 0.74$</td>
<td>$SD = 0.70$</td>
</tr>
<tr>
<td>Participation</td>
<td>$\bar{x} = 0.64$</td>
<td>$\bar{x} = 0.48$</td>
<td>$\bar{x} = 1.05$</td>
<td>$\bar{x} = 0.65$</td>
</tr>
<tr>
<td></td>
<td>$SD = 0.38$</td>
<td>$SD = 0.39$</td>
<td>$SD = 0.69$</td>
<td>$SD = 0.48$</td>
</tr>
<tr>
<td>Overall</td>
<td>$\bar{x} = 0.77$</td>
<td>$\bar{x} = 0.57$</td>
<td>$\bar{x} = 1.09$</td>
<td>$\bar{x} = 0.77$</td>
</tr>
<tr>
<td></td>
<td>$SD = 0.57$</td>
<td>$SD = 0.48$</td>
<td>$SD = 0.73$</td>
<td>$SD = 0.60$</td>
</tr>
</tbody>
</table>

Table 7. Proportions of Each Type of Effect in Each Judgment.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Importance</th>
<th>Interest</th>
<th>Participation</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assimilation</td>
<td>68.3%</td>
<td>68.3%</td>
<td>50%</td>
<td>62.2%</td>
</tr>
<tr>
<td>Contrast</td>
<td>21.7%</td>
<td>15%</td>
<td>31.7%</td>
<td>22.8%</td>
</tr>
<tr>
<td>Assimilated-Contrast</td>
<td>10.0%</td>
<td>16.7%</td>
<td>18.3%</td>
<td>15%</td>
</tr>
</tbody>
</table>
### Table 8. Linear Regression: Importance, Interest, and Potential Participation.

<table>
<thead>
<tr>
<th></th>
<th>Importance</th>
<th>Interest</th>
<th>Participation</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.062</td>
<td>0.273</td>
<td>0.226</td>
<td>0.115</td>
</tr>
<tr>
<td>(P value)</td>
<td>(0.781)</td>
<td>(0.073)</td>
<td>(0.142)</td>
<td>(0.273)</td>
</tr>
<tr>
<td>No-prime condition</td>
<td>0.816</td>
<td>0.402</td>
<td>0.618</td>
<td>0.682</td>
</tr>
<tr>
<td>(P value)</td>
<td>(2.63E-13)</td>
<td>(1.52E-05)</td>
<td>(1.97E-06)</td>
<td>(3.14E-24)</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.584</td>
<td>0.325</td>
<td>0.378</td>
<td>0.495</td>
</tr>
<tr>
<td>( F )-test</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

As it can be seen in Table 5, news items’ scores change more than half a point in a seven-point scale evaluation when they are evaluated with a spatially adjacent prime (prime treatment) compared when they were evaluated without it (no-prime treatment). This is visible in each of the three kinds of judgments whose average changes in items’ scores go between 0.60 and 0.81 (0.43<SD<0.51). Participation judgments (\( M=0.81, SD=0.51 \)) show larger effects by news item than the other two judgments at 1% with importance (\( M=0.60, SD=0.43, t=2.44, p=0.008 \)) and at 10% with interest judgments (\( M=0.68, SD=0.46, t=1.47, p=0.072 \)). The average effect size when pulling the evaluations of the three judgments together is 0.70 (SD=0.47). This supports H1 and its subset of hypotheses H1a, H1b, and H1c, which refer to each of the three judgments tested in the study.

The data reported in Table 6 shows that the effect size by pair (i.e., the average difference between the two news articles’ average evaluations in the no-prime and prime treatments) also changed more than half a point in each of the three judgments. These effect sizes move the difference between the two adjacent items’ evaluations between 0.65 and 0.89 (0.48< SD <0.70). The average effect size by pair when pulling the evaluations of the three judgments together is 0.77 (SD = 0.60). Hence, results of Table 6 also support H1 and each of its secondary hypotheses.
Tables 5 and 6 allow us to see that, overall, assimilated-contrasts—an effect not previously reported in the literature—present the largest mean effect by item and by pair, followed by assimilation and contrast. Although this difference is not significant by item, the mean effect of assimilated-contrasts ($M=1.09$, $SD=0.73$) is significantly larger by pair at 1% when compared with the one of assimilations ($M=0.77$, $SD=0.57$, $t=2.43$, $p=0.008$) and contrasts ($M=0.57$, $SD=0.48$, $t=3.64$, $p=0.000$). This shows that assimilation-contrast is also an effect worthy of further investigations. This finding opens the door to future research projects that should focus not only on the characteristics of the stimuli that fosters this effect but on the mental mechanisms that support it.

Priming effects due to juxtaposition are easily visible in the graphs of Figures 3, 4, and 5. As it can be seen, the solid line is below the dotted line in the three graphs, indicating an overall trend toward assimilation. This fact (along with the F-test shown in Table 8) means that the trend toward assimilation in the three different judgments is significant. Similarly, Table 7 shows that assimilation is the most common effect overall and across judgments, followed by contrast and assimilated-contrast effects.

Overall, in terms of content, the pairs of news articles most prone to assimilation were ST/TS pairs (serious-tragic) with 83.3%, followed by TT pairs (trivial-trivial) with 76.7%, and RS/SR pairs (trivial-serious) with 73.3% of the cases assimilated (see Table 10 below). A chi-square test shows that the lowest of these top three percentages of assimilation cases is significatively lower than the following percentage at 5% ($p=0.039$). In interest judgments, 100% of the pairs RS/SR (trivial-serious) and TT (tragic-tragic) were assimilated. Similarly, 90% of the RS/SR (trivial-serious), TT (tragic-tragic), and ST/TS (serious-tragic) pairs were assimilated in importance judgments. In potential participation judgments, only ST/TS (serious-tragic) pairs had 90% of its cases assimilated (See Table 9 below).
Figure 3. Contextual Priming Effects on Importance Judgments by Content Category
Figure 4. Contextual Priming Effects on Interest Judgments by Content Category

$y = 0.402x + 0.273$

$R^2 = 0.325$
Figure 5. Contextual Priming Effects on Participation Judgments by Content Category
**Assimilation**

Assimilation effects, when target’s and prime’s evaluations move closer, took place in the majority of the 180 judgments (62.2%, see Table 7). This result goes in line with the model proposed in Chapter IV since it suggests that assimilation should be the default operation in evaluation tasks as it is considered to require less effort than contrast by exciting and inhibiting the least number of nodes in the semantic network, which would imply that assimilation is an unintended outcome of a post-conscious process. This overall trend toward assimilation also goes in line with previous studies, which show that assimilation is more common than contrast. A chi-square tests refutes the idea that assimilation and contrast occur in a similar number of cases and, thus, it shows that assimilation occurs significatively more than contrast ($p=0.000$). The largest percentage of assimilation cases took place in interest and importance judgments (68.3%), followed by potential participation, which had a much lower percentage of assimilations than the other two judgments (50%) (see Table 7). A chi-square test shows that the percentage of assimilations in participation judgments is significatively lower than the one in interest and importance judgments at 1% ($p=0.002$).

In terms of importance level, the pairs most prone to assimilation were HH (high-high) with 77.8%, HL/LH (high-low) with 66.7%, and HM/MH (high-medium) with 64.9% of the cases assimilated (See Table 10 below). The pair HH (high-high) is the most assimilated in potential participation judgments and, along with HL/LH (high-low), in interest judgments with 83.3% of the cases assimilated (See Table 9 below). The pairs least prone to assimilation were, in terms of content, TR/RT (tragic-trivial) and RR (trivial-trivial) with 40% and 43.3% of their cases assimilated, respectively, and, in terms of importance levels, LL (low-low) and ML/LM (medium-low) with 41.7% and 48.5% of cases assimilated, respectively.

**Contrast**

From the 180 judgments, 22.8% were contrasted; i.e., prime’s and target’s evaluations became more distant in the prime than in the no-prime condition (See Table 7). As the model suggests, contrast might be a less likely outcome in evaluation tasks since it requires more energy than assimilation. This is because the network has to reduce contamination from activated nodes, which involves a more conscious and less automatic response to the juxtaposition of stimuli. This idea not only derives from the model but also from previous research findings in which experts and those who paid more attention or were aware of the prime’s influence were the least prone to assimilation effects.
Potential participation judgments were the most contrasted (31.7%), followed by importance (21.7%), and interest judgments (15%) (see Table 7). A chi-square shows that the percentage of contrasts in interest judgments is significatively lower than the one in participation judgments at 1% ($p=0.000$). Since participation is the judgment that would require more effort from the individual if he or she actually gets involved in the event, taking into account the model, it is not surprising that it had a higher percentage of contrasts than importance or interest judgments because it would activate more motivated-nodes and the decision would derive from a more conscious evaluation.

In terms of content, the pair TR/RT (tragic-trivial) had the largest percentage of contrasts (60%), followed by RS/SR (serious-trivial) and SS (serious-serious) with 26.7% and 23.3%, respectively. The pair TR/RT (tragic-trivial) has the largest percentage of contrasted cases in importance (70%) and interest (50), and the second largest percentage in potential participation judgments (60%) after the pair RS/SR (serious-trivial) (70%). A chi-square test shows that the observed number of contrast cases in the TR/RT (tragic-trivial) pairs is significatively different at 1% to the average number of cases of the rest of the pairs used in the study ($p=0.000$).

In terms of importance levels, the pairs with highest percentage of contrast overall were ML/LM (medium-low) with 36.4%, and HL/LH (high-low) and LL (low-low), each with 33.3% of cases assimilated. The pair ML/LM (medium-low) was the most contrasted in potential participation (54.5%) and importance (36.4%) judgments, while the pair LL (low-low) was the most contrasted in interest judgments (50%). The pair least prone to contrast effects in terms of content was the ST/TS (serious-tragic) pair with only 3.3% of its cases contrasted, which is significatively different at 1% to the average number of cases of the rest of the pairs used in the study ($p=0.004$). In terms of importance levels, the HH (high-high) pair had the lowest percentage of contrasts (11%), but it is not significatively different to the average of the observed cases of the other pairs ($p=0.165$).

**Assimilated-Contrast**

This effect took place in 15% of the 180 cases (See Table 7). Assimilated-contrasts can also be conceptualized as super-assimilations since the mental process behind them is more similar to assimilation than to contrast; articles had to be assimilated to the point in which, finally, they were contrasted. Results show a small contrast but a large assimilation effect between the articles in the pairs. That is to say, the quantity needed to achieve a complete assimilation between the articles was larger than the quantity that surpassed the assimilation producing a contrast.
Participation and interest judgments have the largest percentage of assimilated-contrast cases with 18.3% and 16.7% their cases assimilated-contrasted, followed by importance judgments with only 10%. In terms of content, the pair with highest percentage of assimilated-contrasts was RR (trivial-trivial) with 40%, followed by SS (serious-serious) with 20%, and TT (tragic-tragic) with 16.7% of the cases assimilated-contrasted, whereas the pairs TR/RT (trivial-tragic) and SR/RS (serious-trivial) did not present any assimilated-contrast. A chi-square shows that the number of contrasted cases of the TR/RT (trivial-tragic) and SR/RS (serious-trivial) pairs is significatively lower at 1% than the average of observed cases of the rest of the pairs ($p=0.003$). In terms of importance levels, the pair MM (medium-medium) has the top percentage with 37.5% of its cases assimilated-contrasted, followed by LL (low-low) with 25%, and ML/LM (medium-low) with 15.2%, whereas the pair HL/LH (high-low) did not present any assimilated-contrast.

These results show that homogeneous pairs, in content as well as in importance level, are more likely to have assimilated-contrast effects. A chi-square test shows that the number of observed cases of assimilation-contrasts in homogeneous pairs, in content category as well as in importance level, is significatively larger at 1% than the number of expected cases based on the percentage of assimilated-contrasts in heterogeneous pairs ($p=0.000; \ p=0.000$). Many of the articles of homogeneous pairs had a low difference between their importance levels in the no-prime treatment. This means that congruity makes adjacent news items more prone to assimilated-contrast effects. This is also visible in the top assimilated-contrasted pairs in each judgment, where most of the pairs are homogeneous pairs either in content or importance level (See Table 9).

In conclusion, the effect sizes reported in Tables 5 and 6, the proportions of each of the effects by judgment shown in Table 7, the results in the graphs, the linear regressions and the F-tests in the three judgments reported in Table 8, and, finally, the pairs most prone to each effect shown in Tables 9 and 10 support, as predicted, H1 and its subset of hypotheses: News juxtaposition promotes context effects in news reception; i.e., news items are judged differently when they are presented without a spatial prime (no-prime treatment) than when juxtaposed with an adjacent spatial prime (prime treatment) in importance (H1a), interest (H1b), and potential participation (H1c) judgments. This implies that evaluations are not absolute but relative to the specific context in which they take place.

Table 9 shows the pairs most prone to each effect by judgment and Table 10 summarizes the pairs most prone to each of the context effects when pulling the results of the three judgments together.
### Table 9. Pairs most prone to Context Effects by Judgment

<table>
<thead>
<tr>
<th>Importance</th>
<th>Assimilation</th>
<th>Contrast</th>
<th>Assimilated-Contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>By content</td>
<td>By content</td>
<td>By content</td>
</tr>
<tr>
<td>ST/TS 90%</td>
<td>LL 75.0%</td>
<td>RT/TR 70%</td>
<td>ML/LM 36.4%</td>
</tr>
<tr>
<td>TT 90%</td>
<td>HM/MH 73.7%</td>
<td>SS 40%</td>
<td>HL/LH 33.3%</td>
</tr>
<tr>
<td>RS/SR 90%</td>
<td>HH - LH/HL 6.7%</td>
<td>RR-RS/SR 10%</td>
<td>HM/MH 26.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interest</th>
<th>Assimilation</th>
<th>Contrast</th>
<th>Assimilated-Contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>By content</td>
<td>By content</td>
<td>By content</td>
</tr>
<tr>
<td>RS/SR 100%</td>
<td>HH 83.3%</td>
<td>RT/TR 50%</td>
<td>LL 50%</td>
</tr>
<tr>
<td>TT 100%</td>
<td>HL/LH 83.3%</td>
<td>RR 20%</td>
<td>HM/MH 18.2%</td>
</tr>
<tr>
<td>SS-ST/TS 70%</td>
<td>HM/MH 73.7%</td>
<td>SS 20%</td>
<td>HH - LH/HL 16.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participation</th>
<th>Assimilation</th>
<th>Contrast</th>
<th>Assimilated-Contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>By content</td>
<td>By content</td>
<td>By content</td>
</tr>
<tr>
<td>ST/TS 90%</td>
<td>HH 83.3%</td>
<td>RS/SR 70%</td>
<td>ML/LM 54.5%</td>
</tr>
<tr>
<td>SS 50%</td>
<td>MM 62.5%</td>
<td>RT/TR 60%</td>
<td>HL/LH 50%</td>
</tr>
<tr>
<td>RR 50%</td>
<td>LL - HL/LH 50%</td>
<td>TT-RR 20%</td>
<td>LL 50%</td>
</tr>
</tbody>
</table>

### Table 10. Pairs most prone to Context Effects Summary.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Assimilation</th>
<th>Contrast</th>
<th>Assimilated-Contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Content</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST/TS</td>
<td>83.3%</td>
<td>TR/TR 60%</td>
<td>RR 40.0%</td>
</tr>
<tr>
<td>TT</td>
<td>76.7%</td>
<td>RS/SR 26.7%</td>
<td>SS 20%</td>
</tr>
<tr>
<td>RS/SR</td>
<td>73.3%</td>
<td>SS 23.3%</td>
<td>TT 16.7%</td>
</tr>
<tr>
<td>By Importance Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HH</td>
<td>77.8%</td>
<td>ML/LM 36.4%</td>
<td>MM 37.5%</td>
</tr>
<tr>
<td>HL/LH</td>
<td>66.7%</td>
<td>HL/LH 33.3%</td>
<td>LL 25.0%</td>
</tr>
<tr>
<td>HM/MH</td>
<td>64.9%</td>
<td>LL 33.3%</td>
<td>ML/LM 15.2%</td>
</tr>
</tbody>
</table>
**H2** Each of the news content categories will have different context effects in different priming conditions (i.e., depending on the news content category with which it is juxtaposed) in (H2a) importance, (H2b) interest, and (H2c) potential participation judgments.

The percentages of each of the effects in each pair type (partially reported in Tables 9 and 10) were used to answer H2 and each of its subsequent hypotheses. These percentages allow us to compare the percentage of assimilations, contrasts, and assimilated-contrasts that took place when a particular content category (e.g., S-serious) was juxtaposed with other content categories, i.e., different priming conditions, (e.g., SS, ST/TS, and SR/RS) (See Table 11).

Results from Table 11 support H2 and its subset of hypotheses. As it can be seen, different priming conditions lead to different proportions of the three effects for each of the different combinations of content categories or pairs in each of the three judgments. Overall, serious (S) news stories are mostly assimilated with tragic (T) news stories, more contrasted with trivial (R) stories, and more assimilated-contrasted with other serious (S) stories. Tragic (T) news stories are mostly assimilated with serious (S) news items, most contrasted with trivial (R), which is the only combination (TR/RT) in which more than 50% of the cases show contrast effects; and, the combination of tragic stories with other tragic stories (TT) is the context that promotes more assimilated-contrasts for tragic items. Finally, trivial (R) stories are mostly assimilated with serious (S) news articles, mostly contrasted with tragic (T) items, and mostly assimilated-contrasted with other trivial stories (RR).

In each of the judgments, each different combination of content categories (i.e., each pair) also lead to different percentages of each of the three context effects found. For instance, in importance judgments, the content category S (serious) had different percentage of contrasted cases in each of its priming conditions (SS 40%, SR/RS 10%, and ST/TS 0%). Another instance is also noticeable in participation judgments where the content category T (tragic) had different percentage of contrasted cases in each priming condition (TR/RT 60%, TT 20%, and ST/TS 10%). Finally, this is also the case in interest judgments and for each of the content categories. Therefore, the results of Table 11 show evidence supporting the hypotheses that each of the news content categories has different context effects in different priming conditions (H2) in importance (H2a), interest (H2b), and participation (H2c) judgments.

These results, along with the findings from H1, give more evidence to the theorized fact in the literature, and one of the assumptions of the network model (see Chapter IV), that humans are cognitive misers whose evaluations are relative to the context. Having a spatial prime adjacent to them or not and
having spatial primes from different content categories causes different evaluations of the news story and different likelihood of each effect.

Table 11. Overall Context Effects by Content Category in Different Priming Conditions

<table>
<thead>
<tr>
<th>Content Category</th>
<th>Priming Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
</tr>
<tr>
<td>Importance</td>
<td>Participation</td>
</tr>
<tr>
<td>50% ass</td>
<td>50% ass</td>
</tr>
<tr>
<td>40% con</td>
<td>10% con</td>
</tr>
<tr>
<td>10% ass-con</td>
<td>40% ass-con</td>
</tr>
<tr>
<td>Interest</td>
<td>Overall</td>
</tr>
<tr>
<td>70% ass</td>
<td>56.7% ass</td>
</tr>
<tr>
<td>20% con</td>
<td>23.3% con</td>
</tr>
<tr>
<td>10% ass-con</td>
<td>20% ass-con</td>
</tr>
<tr>
<td></td>
<td>S</td>
</tr>
<tr>
<td>Importance</td>
<td>Participation</td>
</tr>
<tr>
<td>90% ass</td>
<td>90% ass</td>
</tr>
<tr>
<td>0% con</td>
<td>10% con</td>
</tr>
<tr>
<td>10% ass-con</td>
<td>0% ass-con</td>
</tr>
<tr>
<td>Interest</td>
<td>Overall</td>
</tr>
<tr>
<td>70% ass</td>
<td>83.3% ass</td>
</tr>
<tr>
<td>0% con</td>
<td>3.3% con</td>
</tr>
<tr>
<td>30% ass-con</td>
<td>13.3% ass-con</td>
</tr>
<tr>
<td></td>
<td>T</td>
</tr>
<tr>
<td>Importance</td>
<td>Participation</td>
</tr>
<tr>
<td>90% ass</td>
<td>40% ass</td>
</tr>
<tr>
<td>0% con</td>
<td>20% con</td>
</tr>
<tr>
<td>10% ass-con</td>
<td>40% ass-con</td>
</tr>
<tr>
<td>Interest</td>
<td>Overall</td>
</tr>
<tr>
<td>100% ass</td>
<td>76.7% ass</td>
</tr>
<tr>
<td>0% con</td>
<td>6.7% con</td>
</tr>
<tr>
<td>0% ass-con</td>
<td>16.7% ass-con</td>
</tr>
<tr>
<td></td>
<td>R</td>
</tr>
<tr>
<td>Importance</td>
<td>Participation</td>
</tr>
<tr>
<td>90% ass</td>
<td>30% ass</td>
</tr>
<tr>
<td>10% con</td>
<td>70% con</td>
</tr>
<tr>
<td>0% ass-con</td>
<td>0% ass-con</td>
</tr>
<tr>
<td>Interest</td>
<td>Overall</td>
</tr>
<tr>
<td>70% ass</td>
<td>60% con</td>
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<tr>
<td>0% con</td>
<td>26.7% con</td>
</tr>
<tr>
<td>0% ass-con</td>
<td>0% ass-con</td>
</tr>
<tr>
<td></td>
<td>S</td>
</tr>
<tr>
<td>Importance</td>
<td>Participation</td>
</tr>
<tr>
<td>90% ass</td>
<td>40% ass</td>
</tr>
<tr>
<td>0% con</td>
<td>20% con</td>
</tr>
<tr>
<td>10% ass-con</td>
<td>40% ass-con</td>
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<tr>
<td>Interest</td>
<td>Overall</td>
</tr>
<tr>
<td>100% ass</td>
<td>76.7% ass</td>
</tr>
<tr>
<td>0% con</td>
<td>6.7% con</td>
</tr>
<tr>
<td>0% ass-con</td>
<td>16.7% ass-con</td>
</tr>
</tbody>
</table>
**H3 - The judgment of each news content category will be affected differently depending on the content category of the news item spatially juxtaposed with it.**

H2 analyzed the context effects of each news content category in different priming conditions. H3, by contrast, analyzed how much the mean average evaluation of the items of a content category change in different priming conditions, using as a baseline their evaluation in the no-prime treatment. In this way, it is possible to compare how much the average evaluation of the exemplars of the same content category changed from the no-prime to the prime treatment when they were juxtaposed with exemplars from different content categories. Table 12 shows these changes in the mean average evaluations; positive numbers mean an increase in the average evaluation of a category whereas negative numbers mean a decrease.

Results reported in Table 12 support H3: Content categories increase and decrease their average evaluation differently depending on the content category of the news item juxtaposed with it. In addition, Table 12 shows which context, on average, increases the most –or decreases the least– the evaluation of each content category in each judgment and overall.

Overall, serious news stories’ evaluations increase the most with tragic news items and decrease the most with trivial ones. A t test reveals that serious news stories decrease significatively more with trivial ($M=-0.61$, $SD=0.77$) than with other serious stories at 5% ($M=-0.13$, $SD=1.02$, $t=2.20$, $p=0.015$). This decrease is particularly noticeable in participation judgments where serious news stories decrease, on average, a little more than a whole point in a seven-point scale evaluation when they are juxtaposed with a trivial story (see Table 12). This is predicted by the network model proposed in Chapter IV; in assimilation, which is the default operation, primes’ and targets’ evaluations move closer and, since trivial news stories had the lowest average evaluation of the three content categories in the no-prime condition, there is more room to decrease their average evaluation than with another serious or with a tragic news item.

When pulling the three judgments together, tragic news stories decrease, on average, with all the content categories tested in the study and, though they decrease the most with trivial stories, the difference among content categories is not significant ($M=-0.4$, $SD=1.02$, $M=-0.17$, $SD=1.02$, $t=0.51$, $p=0.306$). However, when the average evaluation of tragic news stories is analyzed by judgment, it is possible to see that they only decrease, on average, in participation judgments. In this case, the only significant difference between content categories is between juxtaposing the tragic story with a serious ($M=-0.65$, $SD=1.38$) and a trivial story ($M=-1.25$, $SD=0.76$, $t=1.31$, $p=0.101$). In importance judgments,
trivial stories increase the most with trivial stories, but this is not significant \( (M=0.59, SD=0.48, M=0.35, SD=0.50, t=1.13, p=0.135) \).

<table>
<thead>
<tr>
<th>Content category</th>
<th>Priming Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
</tr>
<tr>
<td><strong>S</strong></td>
<td></td>
</tr>
<tr>
<td>Imp</td>
<td>( \bar{X} = -0.03 ) SD = 0.55</td>
</tr>
<tr>
<td>Int</td>
<td>( \bar{X} = -0.11 ) SD = 0.65</td>
</tr>
<tr>
<td>Par</td>
<td>( \bar{X} = -0.25 ) SD = 1.58</td>
</tr>
<tr>
<td>Total</td>
<td>( \bar{X} = -0.13 ) SD = 1.02</td>
</tr>
<tr>
<td><strong>T</strong></td>
<td></td>
</tr>
<tr>
<td>Imp</td>
<td>( \bar{X} = 0.35 ) SD = 0.50</td>
</tr>
<tr>
<td>Int</td>
<td>( \bar{X} = 0.18 ) SD = 0.76</td>
</tr>
<tr>
<td>Par</td>
<td>( \bar{X} = -0.65 ) SD = 1.38</td>
</tr>
<tr>
<td>Total</td>
<td>( \bar{X} = -0.04 ) SD = 1.02</td>
</tr>
<tr>
<td><strong>R</strong></td>
<td></td>
</tr>
<tr>
<td>Imp</td>
<td>( \bar{X} = 0.47 ) SD = 0.60</td>
</tr>
<tr>
<td>Int</td>
<td>( \bar{X} = 0.67 ) SD = 0.58</td>
</tr>
<tr>
<td>Par</td>
<td>( \bar{X} = 0.85 ) SD = 0.79</td>
</tr>
<tr>
<td>Total</td>
<td>( \bar{X} = 0.66 ) SD = 0.66</td>
</tr>
</tbody>
</table>

Finally, trivial news stories’ average evaluation increases, overall, with all content categories. A t-test reveals that the trivial news’ average evaluation increase when juxtaposed with serious \( (M=0.66, SD=0.66) \) and tragic news stories \( (M=0.54, SD=0.97) \) is significantly larger than its increase with other trivial news stories at 1% and 5%, respectively \( (M=0.04, SD=1.02, t=2.69, p=0.007 \) and \( t=2.08, p=0.020, \) respectively). This is in line with the model since trivial news have the lowest average evaluation in the no-prime condition and, therefore, when they are juxtaposed with a news story with a higher average evaluation they are usually targets pulled towards the prime’s evaluation. Tragic and serious news have
a higher average evaluation and, therefore, can pull higher the trivial news’ average evaluation than another trivial story.

In conclusion, exemplars of a content category are affected differently depending on the content category of the item juxtaposed with it. Results show that exemplars of a content category are differently evaluated in the three possible juxtapositions and that, in general, these differences are statistically significant. Therefore, H3 is confirmed.

**H4: The juxtaposition of trivial and tragic news stories fosters assimilation.**

*H4a: Tragic news stories have a higher percentage of assimilations when they are juxtaposed with trivial news stories than when they are juxtaposed with articles from other content categories tested in this study.*

As it is reported in Table 11, the pair TR/RT (tragic-trivial) has, overall, the least percentage of assimilations (40%), followed by the pair RR (trivial-trivial) with 43.3% of its cases assimilated. By contrast, the other two pairs with tragic articles, TT (tragic-tragic) and TS/ST (tragic-serious), have 76.7% and 83.3% of their cases assimilated, respectively. A chi-square shows that the percentage of assimilations in TT (tragic-tragic) and TS/ST (tragic-serious) is significatively larger at 1% than the one in TR/RT (tragic-trivial) pairs ($p=0.000; \ p=0.000$). The pair TR/RT (tragic-trivial) has a lower percentage of assimilations in importance and interest judgments than the pairs TS/ST (tragic-serious) and TT (tragic-tragic), and also than TS/ST (tragic-serious) in participation judgments.

Therefore, H4 is not confirmed. Against Berger’s and Postman’s intuitions, the combination of tragic and trivial news stories is the context that produces the lower number of cases of assimilations for tragic news. In addition, if assimilation-contrasts, which are taken as super-assimilations, are added to the assimilation cases, the evidence to refute H4a becomes stronger since TR/RT (tragic-trivial) is the only pair in which, overall, less than 50% of its cases were assimilated. In fact, other pairs that could seem less trivializing to the eyes of Berger and Postman like TT (tragic-tragic) and TS/ST (tragic-serious) were much more prone to assimilation than the pair TR/RT (tragic-trivial), and both pairs have a percentage higher than 90% when assimilations and assimilated-contrasts are added together. Therefore, though there is a large trend toward assimilation effects with juxtaposition in general, TR/RT is the pair least prone to assimilation and the most prone to contrast effects, even when it is highly criticized by both authors. In fact, less than 50% of the cases showed what these authors considered to be a generalized effect. A chi-square shows that the percentage of assimilations in TR/RT (tragic-trivial)
pairs is significantly lower at 1% than the expected percentage if one uses the average of the observed cases of the rest of the pairs used in the study ($p=0.001$).

Since tragic news received the highest average importance level in the no-prime treatment, these results is consistent with the model as it suggests that stimuli considered important, represented by motivated-nodes, would be less prone to assimilation and more prone to contrast when juxtaposed with non-important stimuli. Motivated-nodes have a different activation rule and a self-activation mechanism that reduces and, in some cases, prevents assimilation by keeping them at a minimum activation level that, if reduced by an inhibitory connection, responds by increasing its activation level in some cases surpassing the minimum required, producing a contrast effect.

$H4b$: Tragic articles present larger assimilation effects when they are juxtaposed with trivial news stories than when they are juxtaposed with articles from other content categories tested in this study.

The largest mean assimilation effect for pairs in which one of the articles is a tragic story took place in tragic-trivial pairs (TR/RT) ($M=0.56$, $SD=0.31$). However, a t test reveals that this mean assimilation effect is not significantly different either from the one of the pair TT (tragic-tragic) ($M=0.54$, $SD=0.37$, $t=0.25$, $p=0.403$) or the pair TS/ST (tragic-serious) ($M=0.53$, $SD=0.26$, $t=0.39$, $p=0.349$). In addition, if this mean effect is calculated by adding the assimilated and assimilated-contrasted cases together, tragic news stories present a larger assimilation effect in the TT (tragic-tragic) ($M=0.57$, $SD=0.39$) and TS/ST (tragic-serious) ($M=0.59$, $SD=0.31$) pairs than in the TR/RT (tragic-trivial) pairs ($M=0.56$, $SD=0.31$), though this difference is also not significant ($t=0.05$, $p=0.478$; $t=0.27$, $p=0.395$, respectively). Therefore, $H4b$ was not confirmed.

Table 13. Mean Assimilation Effect Presented on the Tragic Article in Different Priming Conditions

<table>
<thead>
<tr>
<th>Priming Conditions</th>
<th>R</th>
<th>T</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assimilation</td>
<td>0.56 ($SD=0.31$)</td>
<td>0.54 ($SD=0.37$)</td>
<td>0.53 ($SD=0.26$)</td>
</tr>
<tr>
<td>Assimilation + Assimilated-Contrast</td>
<td>0.56 ($SD=0.31$)</td>
<td>0.57 ($SD=0.39$)</td>
<td>0.59 ($SD=0.31$)</td>
</tr>
</tbody>
</table>
**H5: Congruity fosters assimilation.**

**H5a: There is a higher percentage of cases of assimilation when there is congruity in terms of content categories between prime and target than when there is incongruity.**

As shown in Table 11, the majority of the content categories present, overall, a higher percentage of assimilations when they are juxtaposed with articles from another content category than when they are juxtaposed with articles of the same content category. For instance, ST/TS (serious-tragic) and SR/RS (serious-trivial) pairs present, overall, a higher percentage of assimilations than SS (serious-serious) pairs (83.3%, 73.3%, and 56.7%, respectively). Similarly, the RS/SR (serious-trivial) pair has, overall, a higher percentage of assimilated cases than RR (trivial-trivial) pair (73.3% versus 43.3%); the pair RT/TR (trivial-tragic) has, nevertheless, a lower percentage than the RR (trivial-trivial) pair with only 40% of cases assimilated. For tragic articles, this trend also only applies for the pair TS/ST (tragic-serious) which has a higher percentage of assimilations than TT (tragic-tragic) pairs (83.3% versus 76.7%). Finally, if we compare all the heterogeneous pairs (ST/TS, TR/RT, SR/RS) against the homogeneous pairs (TT, SS, RR), the heterogeneous pairs (65.6%) have a higher percentage of assimilated cases than the homogeneous pairs (58.9%). Therefore, this result seems to tilt the comparison in opposition to the hypothesis. However, assimilated-contrast effects took place mostly in homogeneous pairs –RR (40%), SS (20%), and TT (16.7%)–, whereas two of the three heterogeneous pairs (SR/RS, TR/RT) experienced none. In addition, if we add together the assimilated and assimilated-contrasted cases (conceptualized as super-assimilations) in both sets, heterogeneous pairs have a much lower percentage than homogeneous pairs (63% versus 84.4%). A chi-square shows that this difference is significant at 1% (p=0.003).

In conclusion, since in this study assimilated-contrasts are indeed understood as super-assimilations, H5a would be supported. This would go in line with the model proposed in chapter IV. Congruity or homogeneity in terms of content categories is a case of applicability since, presumably, prime and target share many nodes which facilitates assimilation by activating less inhibitory and excitatory mechanisms.

**H5b: There is a higher percentage of cases of assimilation when there is congruity in terms of importance levels between prime and target than when there is incongruity.**

Similar to the results of H5a, congruity in terms of importance levels did not foster a higher percentage of assimilations (see Table 13). Overall, homogeneous pairs (HH, MM, and LL) show a slightly
lower percentage of assimilations than heterogeneous pairs (HM/MH, ML/LM, LH/HL) (57.4% versus 61.1%, respectively). Of the three homogeneous pairs, only HH (high-high) has a higher percentage of assimilations than those in which a news story with high importance is mixed with a news article of a different importance level.

Table 14. Percentage of Assimilations in Different Priming Conditions in Importance Levels

<table>
<thead>
<tr>
<th>Importance level</th>
<th>H</th>
<th>M</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>77.8%</td>
<td>64.9%</td>
<td>66.7%</td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>50%</td>
<td>48.5%</td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td>41.7%</td>
</tr>
</tbody>
</table>

The difference between the percentages of assimilations of congruent and incongruent pairs in terms of importance levels, however, is not significant (p=0.577). In addition, if assimilations and assimilated-contrasts are added together, homogeneous pairs have a significantly higher percentage of assimilations than heterogeneous pairs (83.3% versus 70.6%) at 5% (p=0.04). This result would give elements to support H5b. Both H5a and H5b show that congruity makes prime and target prone to assimilation if assimilated-contrasts are taken as super-assimilations.

In the present study, when pairs congruent in both content category and importance level were compared against incongruent pairs in both content category and importance level, the percentage of assimilations was higher for the incongruent pairs (59.3% versus 50%); however, when the assimilated-contrast cases –which are super assimilations– and the assimilation cases were added together, congruent pairs are more likely to be assimilated than incongruent pairs (66% versus 59.3%). This finding would go in line with the network model of contextual priming effects proposed in chapter IV. The differences between the percentages compared above, however, are not significant (p=0.219, p=0.376, respectively). Definitely, more studies are needed to see how congruity affects the level and percentage of assimilations when two articles are congruent in both content category and importance level.
H5c: Pairs in which news stories have congruity in terms of content categories show larger mean assimilation effects than pairs in which there is no congruity between the news stories juxtaposed.

As it can be seen in Table 15, the mean assimilation effect\(^{59}\) for pairs with congruent content categories (TT, SS, RR) is significantly lower at 1% than the one from heterogeneous pairs (TS/ST, TR/RT, SR/RS) \((t=2.15, p=0.017)\). This result holds, with a significance level at 10%, even if we add the assimilated-contrasts and assimilations together \((t=1.46, p=0.073)\). These results contradict H5c.

<table>
<thead>
<tr>
<th>Pairs</th>
<th>Mean Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assimilation</td>
</tr>
<tr>
<td>TT/SS/RR</td>
<td>0.64 (SD=0.45)</td>
</tr>
<tr>
<td>TS/ST/SR/RS/TR/RT</td>
<td>0.88 (SD=0.66)</td>
</tr>
</tbody>
</table>

It could appear as if these results contradict the results of H5a, in which the sum of the percentage of assimilations and assimilated-contrasts is higher for content-congruent than incongruent pairs. However, there is no contradiction. Content congruity might foster an assimilation effect between prime and target, which is reflected in the percentage of assimilations (when added with assimilated-contrasted cases, i.e. super assimilations). Nevertheless, the farther the difference between prime’s and target’s evaluations in the no-prime treatment, the larger the assimilation effect can be in the prime treatment. Since prime’s and target’s evaluation in the no-prime treatment are farther from each other in incongruent than in congruent pairs, the mean effect can be larger if an assimilation takes place when they are evaluated together.

\(^{59}\) As explained in H1, the mean effect size by pair of assimilations and contrasts is calculated by subtracting the absolute difference of articles A’s and B’s mean evaluation in the no-prime treatment from the absolute difference of their evaluations in the prime treatment. For assimilated-contrast cases, since their ranking orders were switched in the prime treatment evaluation, the absolute values of articles A’s and B’s average evaluation in the no-prime and prime treatments have to be added instead of being subtracted.
**H5d:** Pairs in which news stories have congruity in importance levels show larger assimilation effects than pairs in which there is no congruity between the news stories juxtaposed.

Similar to the results obtained in H5c, congruent pairs in terms of importance level show a significantly lower mean assimilation effect at 1% than incongruent pairs ($t=3.16$, $p=0.001$) even if assimilations and assimilated-contrasts are added together ($t=3.39$, $p=0.000$; see Table 16), which clearly contradicts H5d. This result goes in line with the explanation given in H5c, in which the larger the difference between prime’s and target’s evaluations in the no-prime treatment, the larger the effect can be in the prime treatment. In addition, we get similar results when pairs congruent in both content and importance level are compared against incongruent pairs, in which incongruent pairs show larger assimilation effects than congruent pairs with a significance level at 1% ($t=3.23$, $p=0.001$) and this result holds when assimilations and assimilated-contrasts are added together ($t=2.47$, $p=0.008$; see Table 17). Therefore, the differences in mean assimilation effects between congruent and incongruent pairs become larger when both content and importance level are taken into account.

**Table 16. Mean Assimilation Effect and Congruity in Importance Level.**

<table>
<thead>
<tr>
<th>Pairs</th>
<th>Assimilation</th>
<th>Assimilated-Contrast</th>
<th>Assimilation + Assimilated-Contrasts</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH/MM/LL</td>
<td>0.50 ($SD=0.36$)</td>
<td>0.72 ($SD=0.54$)</td>
<td>0.56 ($SD=0.43$)</td>
</tr>
<tr>
<td>HM/MH/HL/LH/ML/LM</td>
<td>0.87 ($SD=0.61$)</td>
<td>1.30 ($SD=0.82$)</td>
<td>0.93 ($SD=0.65$)</td>
</tr>
</tbody>
</table>

**Table 17. Mean Assimilation Effect and Congruity in Content and Importance Level.**

<table>
<thead>
<tr>
<th>Pairs</th>
<th>Assimilation</th>
<th>Assimilation + Assimilated-Contrasts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congruent</td>
<td>0.41 ($SD=0.29$)</td>
<td>0.60 ($SD=0.50$)</td>
</tr>
<tr>
<td>Incongruent</td>
<td>0.91 ($SD=0.68$)</td>
<td>0.96 ($SD=0.73$)</td>
</tr>
</tbody>
</table>
H6: Contrast effects are more likely to occur if there is disruption between prime and target than when there is no disruption, i.e.:

H6a: Contrast effects are more likely to occur when tragic and trivial content is juxtaposed than when tragic news items are juxtaposed with serious or other tragic news items.

H4a tested if Berger’s and Postman’s intuitions about the mixing of tragic and trivial content were correct. As previously shown in H4a, the juxtaposition of tragic and trivial produced the lowest percentage of assimilations. By contrast, the objective in H6a is to see if this juxtaposition also produces the highest percentage of contrasts in comparison with the other two possible juxtapositions for tragic articles (i.e., TS/ST and TT). As it can be seen in Table 11, overall, there is a larger percentage of contrasts in the juxtaposition of tragic news stories when they are paired with a trivial article (60%) than when they are paired with a serious (3.3%) or another tragic news item (6.7%) \((p=0.000; \ p=0.000)\). This result takes place across all judgments. For instance, in participation judgments, the juxtaposition of tragic and trivial content has 60% of contrasts, whereas TS/ST (tragic-serious) and TT (tragic-tragic) pairs have only 10% and 20% of contrasted cases. Similarly, TS/ST (tragic-serious) and TT (tragic-tragic) pairs do not show contrasts either in interest or in importance judgments, while TR/RT pairs have 50% and 70% of contrasted cases in those judgments, respectively. Therefore, contrary to Berger’s and Postman’s expectations, the juxtaposition of tragic and trivial content is less prone to assimilation and more prone to contrast effects than the juxtaposition of tragic with other tragic or serious content. Hence, results confirm H6a.

H6b: Contrast effects are more likely to occur when serious and trivial content is juxtaposed than when serious items are juxtaposed with other serious or tragic items.

As it can be seen in Table 11, overall, there is a slightly larger percentage of contrasts in the juxtaposition of serious news stories when they are paired with a trivial article (26.7%) than when they are paired with a serious news story (23.3%), and much larger when they are paired with a tragic news item (3.3%). This result does not hold across judgments. In fact, SS (serious-serious) pairs have a larger percentage of contrasts than the SR/RS pairs in importance and interest judgments (40% and 20% versus 10% and 0%). However, in participation judgments, SR/RS pairs have a significantly larger percentage of contrasts than the SS pairs (70% versus 10%, \(p=0.000\)). In conclusion, results do not support H6b. More studies should be done to see why the results in participation judgments are so different than in importance and interest judgments regarding the percentage of contrasts of SR/RS (serious-trivial) and SS (serious-serious) pairs.
**H6c:** Contrast effects are more likely to occur when items with different importance levels are juxtaposed than when the items have similar importance levels.

Overall, pairs in which the articles have similar importance levels have a lower percentage of contrasted cases than pairs in which the stories have different importance levels. For instance, HH (high-high) pairs show less contrasts than HL/LH (high-low) and HM/MH (high-medium) pairs (11.1% versus 33.3% and 22.8%, respectively). The same happens with MM (medium-medium) pairs, which have a smaller percentage of contrasts than ML/LM (medium-low) and MH/HM (medium-high) pairs (12.5% versus 36.4% and 22.8% and, respectively). LL (low-low) pairs (33.3%) have a smaller percentage of contrasts than LM/ML (low-medium) pairs (36.4%) but a similar percentage than LH/HL (low-high) pairs (33.3%). If the pairs with homogeneous importance levels are grouped (HH, MM, and LL) and compared against the group of pairs with heterogeneous importance levels (HM/MH, HL/LH, ML/LM), the homogeneous pairs have a smaller percentage of contrasts than the heterogeneous pairs (16.7% versus 29.4%). A chi-square test shows that the observed percentage of contrast cases in the heterogeneous pairs is significantly larger than the homogeneous pairs at 1%. Therefore, H6c is confirmed.

In conclusion, the postulate of H6 is supported: disruption between prime and target fosters contrasts effects. In H6a, tragic content was more prone to contrast effects when juxtaposed with trivial content than when juxtaposed with tragic or serious content. While the results were not significant, there was, overall, a slightly larger percentage of contrasts for SR/RS (serious-trivial) pairs than for SS (serious-serious) pairs in H6b, and this difference was higher in participation judgments. Finally, in H6c, pairs in which articles have different importance levels are more prone to contrast effects than those which have similar importance levels. Thus, pairs with disruption either in content or importance level are more prone to contrast than those that do not have disruption. Contrary to common intuitions, this finding, along with previous results, discredits Berger’s (1982) and Postman’s (1985) criticisms toward the mixture of trivial with tragic content, and trivial with serious content. Tragic and important news stories usually get a higher evaluation if juxtaposed with a trivial than with a tragic or serious news story, and important news stories also get a higher evaluation if juxtaposed with a news item of a lower importance level. In fact, in most contrasted cases, the contrast effect was not achieved by lowering the evaluation of the originally least important article, but by increasing the importance level of the originally most important one. This is consistent with the model, in which contrast effects are produced when motivated-nodes activate their self-resending mechanism in response to inhibition by the nodes representing the least important stimulus, leaving their activation level even higher than before receiving the inhibition. That is why in assimilation, the least important article in the pair is the one
whose evaluation changes more from the no-prime to the prime treatment, but in contrast effects the one that changes most is the most important article since the activation level of its motivated-nodes was increased in response to inhibition.

For instance, taking a pair from the testing material, when a tragic news story like “Hundreds Are Feared Dead” was evaluated in isolation, it receive a lower importance, interest, and potential participation scores (4.55, 4.5, and 2.62) than when it was paired with a trivial story like “Rihanna Gets a Gun Tattoo” (5.33, 5, and 3.9). In another example, the news article “Millions of malnourished children” was evaluated as less important, less interesting, and with lower potential participation when it was paired with a serious news item like “Obama team deploys campaign tactics” (5.93, 4.9, and 4.14) than when paired with a trivial news story like “The world’s most stylish icon turns 50” (6.14, 5.4, and 4.86). More importantly, the combination of trivial with tragic news content gets a larger percentage of contrasts in potential participation judgments, which probably has a more direct effect on individuals’ donations given for tragedies and other kinds of political involvement in tragic events. In these two last examples, participants felt more prone to participate in the tragic event when it was paired with a trivial news item than when it was evaluated without context or when it was paired with a serious news story. In fact, individuals’ average participation fell when the tragic event was paired with a serious news story. And these examples are only a few instances of a larger trend. The topic of how juxtaposition affects donations is a promising area of research that should be followed in further investigations. These results also give some credit to Baum’s (2002) theory that trivial programs that talk about serious problems inform the public, in this case without trivializing the latter.

In reference to the model, while the mental representations of trivial and tragic stories possibly do not share nodes in the network (applicability), it is possible that they have inhibitory connections between them rendering the representation of one relevant to the representation of the other (relevance). Possibly, emotional disruption is necessary or at least facilitates a less automatic response from the individual in the evaluation task, preventing and reducing assimilation. Possibly, motivated-nodes’ different activation rule and self-connection might be responsible for reducing and preventing assimilation and producing contrast when their activation levels are reduced below the minimum level required, forcing them to re-send the current activation level through their self-connection until reaching and, in the case of contrast effects, surpassing the minimum activation level.
Prime and Target

Finally, the data were studied to see which of the two articles in each pair had a larger effect, i.e. which of the two news stories changed more in the prime treatment according to their place (left versus right). The eye-tracking literature\(^{60}\) indicates that individuals use to read websites from left to right but also that, after starting on the left, they scan the website in many different directions (usually scanning and jumping among the different items on the website). In this way, even when the left article had a higher probability of being the prime according to eye-tracking studies, it was theoretically impossible to determine in the experiment design which of the two news stories appearing together would act as prime and which as target. But once the data were collected, it was operationalized that the one that showed the larger effect within the pair was the target since it was more influenced by the other news item than vice-versa. In this way, the article of the pair that had a smaller effect was considered the prime. This operationalization follows the model, in which the prime is considered to be the most influential article in the pair since it leads the priming process.

As expected, articles appearing at the left were more likely to be primes than those at the right. However, this difference in percentages was very small (51.1% left, versus 48.9% right). An interesting finding was the fact that the most important article functions as a prime and the least important one as a target in the majority of the pairs (64.4%), predicting better the article’s role as prime or target than its left or right position (51.1%) as one would expect according to the results obtained in eye-tracking studies. A chi-square test shows that using an article’s importance level for its prime or target role leads to a significantly larger percentage of successful predictions than using its left or right position \((p=0.000)\). In reference to the model, important stimuli are represented by motivated-nodes and, in many cases, these are also chronically accessible; thus, their minimum activation level is usually higher. With a higher activation level, the nodes of the important concept easily dominate the processing of stimuli influencing more the processing of the target stimulus than vice versa. The role of prime or target is decided by the level of activation of the nodes representing each article. The prime activates a set of nodes, in this case related to importance judgments (making the priming an ‘evaluative priming’), that are still activated when the individual evaluates the target. These nodes, because they are still active, have a high probability of being used along with the nodes activated by the target stimulus generating assimilation, contrast, or assimilated-contrast. In this way, the nodes with highest activation are used along with the ones turned on by the target stimulus to process the latter. Though the

\(^{60}\)E.g., Holmqvist, et al. (2003).
experiment was done with average importance for a group of participants, it goes in line with the model’s predictions.

For tragic stories, which had the highest average in importance rating, this result means that they have a higher probability of being the prime than trivial stories, which were the ones with the lowest average importance. Thus, in line with the results of the previous hypotheses which show that tragic news are mostly contrasted and less assimilated with trivial contexts, the tragic news is less likely flattened in a trivial than in a serious or a tragic context. This result was corroborated when looking at the few tragic exemplars that appeared across priming conditions; a trivial context usually increases most the mean importance, interest, and potential participation ratings of tragic news stories. For trivial news articles, by contrast, the context that increases most their evaluation is where there are mostly assimilated since the most important usually pulls the least important toward its evaluation. Therefore, the context in which the trivial news is mostly assimilated and least contrasted would be the serious context. However, if assimilated-contrasts are taken as super-assimilations and these two effects are added together, the context in which the trivial news increases its evaluation the most would be other trivial news stories.

Summary of findings

Results show that there are significant context effects in the evaluation of news events due to juxtaposition. A news story’s average importance, interest, and individuals’ potential participation in it changes when the story is evaluated without and with spatial juxtaposition, and in different priming conditions. Assimilation effects were the most common priming effect found, followed by contrast and assimilated-contrast. As predicted by the network model of contextual priming effects outlined in Chapter IV, assimilation seems to be the default operation in evaluations when priming effects take place. Results show that assimilation happens in a significatively larger percentage of cases than contrast and assimilated-contrast.

By contrast to previous criticisms in the literature, the juxtaposition of trivial and tragic content is the least prone to assimilation effects—which trivialize the most important article of the pair by reducing the gap between its and the least important article’s evaluation—and it is also the most prone to contrast—in which the most important article of the pair not only remains the most important one but the gap with the least important article’s evaluation becomes larger. In fact, the juxtaposition of
tragic articles with other tragic or serious items is much more prone to assimilation, which to the eyes of Berger and Postman would have seem a more reasonable and acceptable juxtaposition.

There is still a lot of research work to do in relation to the role of congruity in priming effects. On a first analysis, results show that congruity does not foster assimilation. But if assimilation and assimilated-contrast cases are added together –taking into account that assimilated-contrasts are super-assimilations–, then results show the opposite trend in content as well as in importance level. This would mean that congruent items are more likely to be assimilated than incongruent ones. But, even if assimilation is more likely in congruent pairs, the effect is larger when it takes place in incongruent pairs. This makes sense since congruent items are closer in their evaluations and, therefore, there is a small gap to close. In contrast, incongruent pairs, which have larger gap, present a larger mean effect. Just as assimilation is more frequent in congruent pairs, contrast is more common in pairs that present disruption, such as having different importance levels or the mixing of trivial with tragic content.

Finally, it was found that a news story’s importance level is a better predictor for its prime or target role than its left/right position in the pair. This finding is interesting because eye-tracking studies predict that left articles would be more likely primes than targets since individuals usually start reading from left to right. The finding goes in line with the model proposed in Chapter IV, in which the most important article pulls –in assimilation– the least important article’s evaluation toward its own.
CHAPTER VII

JUXTAPOSITION AND NEWS

In this chapter, first, I discuss the non-neutrality of layout design in light of the results of the experiment along with previous studies that have focused on its ideological, perceptual, and interpretational biases. Then, based on previous historical research on the form of newspapers and the three dimensions of juxtaposition proposed in Chapter two, I present a theoretical analysis of the juxtaposition of news in different newspaper periods. As is shown below, the recent shift towards online news design has significantly reversed a decreasing juxtaposition trend through newspaper history that makes the study of the phenomenon even more urgent. The possible implications of this trend are analyzed using the experimental results.

Non-neutrality of Layout Design

It is easy to confuse the content of any medium for its whole message. As McLuhan (1964) warns, most people and even researchers, blinded by the content, totally ignore the medium that supports it. Newspaper layout, “the grid that organizes everything on the [newspaper] pages” (Barnhurst, 1998), is not the exception. Even though tradition or routine may make layouts seem something natural or neutral, this is not the case: the form matters. The organization of messages in a newspaper or home page is not an objective representation of reality. Content and form are both social constructions: they are cultural and socioeconomic products that create rituals, influence readers’ preferences, and impose reading patterns.

A common assumption in several journalism and in political communication studies is that layout is natural and transparent, an efficient and simple arrangement of words and images that results from professional and neutral practices (Barnhurst, 1993). On one hand, a trend in journalism studies and newspaper design considers that there is an optimum layout design that must be subjected to objective scientific laws. This perspective has fostered an imitation trend among newspapers and the spread of newspaper designs from the U.S. into other countries (Barnhurst, 1991). On the other hand, political communication paradigms, such as agenda setting and framing, usually overlook layout design and news presentation to focus only on news content. In all these studies, the content remains visible and the medium invisible; researchers are caught in the attractiveness and ease of looking just at the
content ignoring the effects of the medium that carries it. As McLuhan (1964) says, acts of censorship always attack content, never the medium.

However, layouts and newspapers designs are far from neutral. The form of news, all the structural characteristics that define how content is displayed and organized in the newspaper, is the result of the interaction of economic, social, and cultural forces in a particular historical period (Nerone & Barnhurst, 2003). The newspaper page conveys meaning not only linguistically but through its particular visual arrangement of elements, giving a particular view of how events and actors are interrelated. The layout creates certain expectations in the reader in terms of the accommodation of content. Readers expect important news to be located at the top and to have more saliency than less relevant items. For instance, top stories usually have large sized headlines (Leturia & Barnhurst, 2009). The form, then, becomes a familiar and recognizable face that is the same even when the content regularly changes (Barnhurst, 2002). The importance of layout, however, resides in how it interacts with content. Just as many researchers ignore the medium, some media technology critics such as McLuhan fail to take into account the content. Both are partial approaches to complex phenomena in which medium and content make the whole message. Therefore, the effects of a particular layout cannot be measured or analyzed in disjunction from its content. A more complete approach, like the three dimensions of juxtaposition proposed in Chapter two, involves the analysis of content according to its form. News layouts are not neutral due to the effects of juxtaposition and due to their political, perceptual, and interpretational biases.

As proved in priming and context effects research in other kinds of stimuli and by the present study in news items61, juxtaposition, one of the consequences of layout design, affects readers’ evaluations and meaning making processes. All the elements that appear in the layout are the context of any particular item. As shown in the experiment, items receive a different evaluation when they are isolated than when they are juxtaposed and this evaluation also changes depending on the content category and importance level of the adjacent item. The experiment tested only three kinds of evaluations (importance, interest, and potential participation) but probably juxtaposition has priming effects in other judgments as well and in terms of meaning, which should be proved in follow up studies. Though the findings of the experiment refer only to the juxtaposition of two news items, the effects of juxtaposition should be more complex as more elements are juxtaposed, which should also be tested in future experiments. What is clear with the experimental results is that assimilation is the most common

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61 See Chapter VI.
result of juxtaposition and, therefore, items’ evaluations usually tend to be closer when juxtaposed compared to when they are read in isolation. While news items’ importance evaluations and potential participation judgments can have political implications, there are other more direct political biases of layout designs.

Even when mainstream political communication pays little attention to the visual presentation of news, layouts can be politically charged. In a comparison of how mainstream Peruvian newspapers treated terrorism versus other stories, Barnhurst (1993) found that the patterns of coverage and visual presentation were related to the political ideology of each newspaper. Publishers tried to "play down" the coverage of terrorism by placing it "down page" or banning it from the front page. These findings exemplify how newspapers might intentionally use layout to reflect their political positions on certain topics.

Similarly, layouts’ design features have perceptual biases. For instance, several visual cues are used to give salience to certain news items and can be used to reduce juxtaposition in terms of resemblance: headline size, column width, story length, location in the page, number of decks, layout axis, and the presence or absence of pictures. Researchers have found that features such as colors and typefaces used in the text also affect readers’ judgments when they evaluate front pages through a semantic differential scale. Colored front pages were significantly rated as more pleasant, interesting, fair, truthful, unbiased, and responsible than front pages in black and white (Click & Stempel, 1976). Layouts also influence the perceived tone of news articles. Horizontal layouts are rated as more comfortable, light, and pleasing than vertical layouts matching the tone of human interest stories while vertical layouts match hard news’ tone (Middlestadt & Barnhurst, 1999). In addition, several studies show readers’ preferences for some newspaper designs over others (Siskind, 1979).

Similar results have been obtained through eye-tracking studies. Researchers have found that items’ position, size, and pictures affect their saliency levels. Since most readers start scanning the page from the upper left to the lower right corner, news items placed at the upper left are read significantly earlier and longer than those placed in other parts of the page (Holmqvist, et al., 2003). Larger items attract readers’ attention earlier and longer than smaller items (Holmqvist & Wartenberg, 2005). These two findings have been replicated in eye-tracking studies of online home pages (see Outing & Ruel, 2004). Picture-less areas are seen less often than areas with images. In addition, several design features, such as drop quotes and fact boxes, function as ‘entry points’, which not only attract readers’ attention but make them switch their way of looking from scanning to reading. Finally, news items presented in a
vertical or horizontal form are seen earlier and longer than those that appear in a squared style (Holmqvist & Wartenberg, 2005).

Also related to perceptual biases, Gestalt\textsuperscript{62} principles have been used to analyze news layout designs and to hypothesize their possible effects (see Smith, 2005). Gestalt theory studies how “the mind imposes its own structures and organization on stimuli and ... organizes perceptions into wholes rather than discrete parts” (Galotti, 1999, p. 12). The fundamental theorem of the Gestalt school is that the sum of the parts is less than the whole. Applied to newspaper layouts, this theory means that the specific arrangement of elements means a lot more than the collection of individual items. It implies that the whole message in a newspaper page is not only the sum of content and form, but also their interaction. When using Gestalt principles for analyzing newspaper design, it is important to keep in mind that while some of them have been tested in laboratories by exposing participants to very simple stimuli such as small dots and lines (see for example Kubovy, Holcombe, & Wagemans, 1998), they have not been tested in complex stimuli such as newspapers or home pages. Their usefulness in describing readers’ actual perception of news items is still an unanswered empirical question that requires further investigation. However, these principles have been used in design and critical theory by extrapolating them to more complex stimuli (for an example see Smith, 2005).

From Gestalt perceptual theory, the principles of proximity and similarity have been the most applied to the analysis of newspaper front pages. The Gestalt principle of proximity proposes that visual elements that are close to one another are mentally grouped together. In addition, proximity evokes similarity; hence, adjacent elements could be perceived as having the same importance or value. This Gestalt principle goes in line with the experimental findings –where assimilation is the most common response to juxtaposition– and with the network model –which proposes assimilation as the default context effect in the juxtaposition of two news items. Through assimilation, two adjacent juxtaposed items are evaluated more similarly than if they were evaluated separately. The present study shows that it is more likely for two adjacent juxtaposed items to be assimilated than to be contrasted in terms of importance, interest, and potential participation. Follow up experiments should test if this also happens in terms of news items’ semantic categorization; however, previous studies about the disambiguation of

\textsuperscript{62} The Gestalt principles and theory, though not their application to juxtaposition, were taken mainly from Özerkan, Kartopu, and Ayar (2006).
ambiguous stimuli already show that participants are likely to classify two juxtaposed items under the same conceptual category\textsuperscript{63}.

The principle of similarity suggests that humans tend to group together objects that resemble each other in appearance. This relates to juxtaposition’s resemblance dimension: if two close elements present the same color base, typeface, or size, the probability of treating them as if they were conceptually similar increases. These Gestalt principles related to juxtaposition’s density and resemblance dimensions can be applied to the analysis of front and home pages in which several news items of different sections and advertisements appear close to one another (putting into play the law of proximity) and physically resemble each other (calling into action the principle of similarity). Other Gestalt laws, such as the principles of magnitude and intensity, which state that the bigger and the more intense the stimulus, the more it attracts a viewer’s attention, have been proved in eye-tracking studies of newspaper reading\textsuperscript{64}.

Moving from perceptual to interpretation and semantic biases, news items’ position endows them with a particular intrinsic value and meaning. Kress and van Leeuwen (1998; 1996) decompose layout design in three interrelated signifying systems: information value, salience, and framing. The value and meaning of an element is not the same when it is placed at the right or the left side, at the top or at the bottom, at the center or the margins of the page. Kress and van Leeuwen give opposite meanings to opposite sides of the page. For instance, they attribute the polarizing terms of given and new to the information placed at the left and right side, respectively, of the page. Similarly, they attribute the values of ideal and real to the information placed at the top and the bottom of the page. Although they provide a few examples in which this classification of values could apply, they do not show that this corresponds to readers’ perception or editors’ placement of information and that it applies to the majority of newspaper front pages. These authors suggest that relative salience among different elements within a page provides them with a hierarchical system of importance. That is why high resemblance in juxtaposition could foster the flattening of news hierarchies. Finally, framing refers to visual cues that separate or connect elements within the page such as white spaces, lines, and frames. This principle of Kress and van Leeuwen’s theory is similar to Gestalt laws of continuity and

\textsuperscript{63}E.g., Bugelski and Alampay (1961), Bruner and Minturn (1955), Foss (1988), among others.
\textsuperscript{64}See, for instance, Holmqvist and Wartenberg (2005).
proximity. This sociosemiotic perspective has also been applied to the analysis of home pages of news websites.\textsuperscript{65}

In conclusion, contrary to the common belief, newspaper layouts are not neutral. Layouts promote contextual priming effects through juxtaposition and can be politically as well as perceptually and semantically biased. The position and characteristics of news items endows them with certain connotations that affect their potential meaning. All these studies about the non-neutrality of layout design have focused on several features of news presentation such as elements’ size, position, color, typeface, etc.\textsuperscript{66} Even if some of these studies touch some aspects related to the three dimensions of juxtaposition, none of them analyzes its three dimensions. The following section uses these dimensions to track the evolution of juxtaposition in the history of U.S. newspapers and online news.

**Historical Changes in News Juxtaposition**

News juxtaposition is not a recent phenomenon. Designs favoring the juxtaposition of news have existed since early newspapers and throughout newspaper history. Artistic and design trends, news ideologies, socioeconomic forces, and technological innovations have shaped the way elements have been spatially arranged in newspapers and, more recently, in news websites. These factors have influenced news sources’ decisions in layout design and its level of spatial juxtaposition. The influence of these forces in news juxtaposition has not been unidirectional; on the contrary, these forces sometimes generated higher and other times lower levels of spatial juxtaposition, even during the same historical period. This aims to be a theoretical not a historical analysis, though it is based on the history of the form of newspapers already addressed by other authors.\textsuperscript{67} Guided by newspaper history, I present a new interpretation of historical data by using the three dimensions of juxtaposition (density, contrast, and resemblance) and how they have changed through different newspaper eras.

**Early Newspapers (1750-1800)**

\textsuperscript{65} For an example, see Knox (2007).
\textsuperscript{64} In this thesis, I focus on layout biases in terms of their visual presentation. For usability biases of design features in online news, see Li (1998).
The beginning of this historical period had the lowest level of juxtaposition: pages were not very dense and the arrangement of elements kept contrast low, though ads and news resembled each other in style. At the end of this period, however, news juxtaposition increased. Due to pressures from sponsors to increase market share, newspaper pages became more crowded and ads started to appear close to news content, but they were conspicuously different from news items.

Early colonial newspaper pages had low density providing only a few competing noisy-stimuli for news items. News items were surrounded by white spaces and openings, and were originally arranged in a three-column format (Barnhurst & Nerone, 2001). These white spaces and openings provided clear visual divisions among news items separating them from their potential primes, while the three-column format provided a limited space for placing news. This low level of density changed in later years. The format grew to accommodate four and five columns, white spaces were made thinner, and the number of elements per page increased (Barnhurst & Nerone, 2001), which diminished the visual separation among items and increased the number of potential primes. Advertisers pressured printers to increase the space devoted to ads (Shaw, 1959). Hence, the need for making more advertising space might have motivated shrinking of news typography and adding more columns to the pages.

News items were mostly similar in content providing, therefore, few potential contrasting primes for each of them. Most of the content consisted of political matters such as colonial and royal proclamations and orders, governors’ remarks, legislation concerning the colonies, and political controversies. There was a low level of juxtaposition among different news themes due to this asymmetric proportion of political to other kinds of content, such as excerpts from scientific books and travels of famous men, poems and literary essays, moral discourses and sermons, and death announcements.

The criteria employed to arrange news items also kept the contrast among news items low. First, news items obtained from Europe (even if they originated at another place) appeared together, followed by news from the Americas, then from North America, and, finally, local news (Nerone & Barnhurst, 2003). Thus, with respect to their origin, there was a low level of contrast among news items. However, this low contrast was altered to some extent because the temporal order in which each news item was received also played a fundamental role in its accommodation within the paper. Printers usually “set type columns as the week progressed” (Merritt, 1963, p. 362), accommodating the content

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68 Merritt (1963), Nerone and Barnhurst (2001), and Shaw (1959).
69 See Merritt (1963) and Shaw (1959).
as they were receiving it. At the same time, printers wanted to signal news items’ importance by placing the top news in the middle pages of the paper instead of the front page (Barnhurst & Nerone, 2001). Therefore, the criteria of arranging news items according to the place in which they were obtained and their importance worked toward low contrast of items; this tendency was distorted to some extent by the order in which the items were received.

Contrast was also kept low because advertisements were not close to news items; therefore, they were only potential primes to other ads. This was the case because ads were grouped together in the last page of the paper (Shaw, 1959), although there was not a clear boundary signaling the end of the editorial content from the beginning of the advertising space (Barnhurst & Nerone, 2001). Advertising style, however, kept juxtaposition high in terms of resemblance. Ads and news were visually very similar at the beginning of the Colonial period (Barnhurst & Nerone, 2001). Thus, even when they were grouped at the end of the paper, there were not easily distinguished from news.

The role of advertising in news juxtaposition changed at the end of this historical period, generating not only higher density, as explained above, but also higher contrast among news items. Because printers needed to include advertisements to free themselves from subsidies from the government as well as from political parties, the number of ads grew in time, eventually including between one-third and three-quarters of newspapers’ total space by the time of the Revolution (Shaw, 1959). Advertisers pressured printers to break the tradition of placing their ads at the back to place them on every page, even the front page (Shaw, 1959; Barnhurst & Nerone, 2001). This ad growth and its presence in every page of the newspaper generated a higher level of contrast. For instance, it has been documented that notes selling and buying slaves, books, and products imported from Europe usually shared space with political matters and other kinds of news (see Shaw, 1959). However, since advertisers wanted to capture readers’ attention, they started to visually differentiate their ads’ style, reducing juxtaposition in terms of resemblance. To achieve this, advertisers made ads’ appearance more conspicuous by incorporating varied typography, boxes, and spaces between them and, when ads were moved to every page of the newspaper, they included visual cues such as rows of type ornament to differentiate them from news (Shaw, 1959). By contrast, printers did not use any visual cue to signal news’ hierarchy, increasing the level of resemblance among news stories.

In conclusion, early newspapers moved from low to high juxtaposition levels, from a simple to a more complex saturated context. The arrangement of items in early newspapers depended mostly on
the ideology and practices of printers. Advertisers’ pressures, however, had an important role in layout changes that increased the level of density and contrast.

**Partisan newspapers (1810-1840)**

Economic pressures and advertisers’ design innovations motivated several changes in the organization and style of the Transitional and Partisan newspapers. Newspapers fostered a greater juxtaposition in terms of density and contrast by offering more and more diverse content in larger formats to attract wider audiences. This increase in density and contrast was controlled by the new trend of news segmentation in which content appeared more thematically and hierarchically organized by surrounding news items with similar potential primes. Advertisers continued to visually differentiate their ads from news and opinion and columns from different parties were also visually differentiated; therefore, fostering a lower level of resemblance among items.

Miscellaneous content and larger pages increased density and contrast, as there was more space to be shared by more diverse news items. On one hand, printing newspapers became economically more dependent of sponsors; advertisers and political parties pressured editors for a more diverse content to attract a broader and more varied pool of consumers and voters (Barnhurst & Nerone, 2003; 2001). These pressures to increase market share, forced editors to enlarge newspaper formats as to accommodate more content (increasing density) and to include more varied news in their pages (increasing contrast). One proof of this increase in density is the growth in pages’ size and number of columns that expanded newspaper capacity by one-sixth (Barnhurst & Nerone, 2001). However, the increase in contrast was somewhat neutralized by the new trend of news segmentation, through which items of similar themes appeared together in the same page. Editors started to segment content thematically in different sections in accordance to subject heads, as advertisers wanted to narrowly target their ads to more specific audiences (Barnhurst & Nerone, 2001). Nevertheless, even when adjacent news items usually referred to similar matters, advertisements were still juxtaposed with news content. Advertisers started to place clusters of ads in particular news departments and even motivated the introduction of new sections devoted to specific interests, such as sports, to strategically position their announcements (Barnhurst & Nerone, 2001). This juxtaposition, in turn, increased again the level of contrast.
Partisan politics and advertisers’ stylistic innovation motivated changes in news juxtaposition in terms of resemblance. The opposition among ideas from different political parties required visual contrasts in newspaper style and aesthetics, which reduced resemblance. Editors tried to signal differences between the arguments and claims from the different political parties by imitating stylistic innovations introduced in advertising, such as the use of illustrations, boxes, variations in typography, and headline forms (Nerone & Barnhurst, 2003). Advertisers’ stylistic innovations also reduced the level of resemblance between news and ads, even when news items started to imitate their innovation patterns. Finally, content became more hierarchically organized in a “stream of paragraphs” (Nerone & Barnhurst, 2003, p. 118). The use of visual cues to express contrast and the signaling of news’ hierarchies reduced the level of resemblance among newspaper elements in this historical period.

In conclusion, news juxtaposition increased in terms of density, while it had opposite trends in terms of contrast and resemblance. Larger formats and more columns fostered denser pages. The introduction of more diverse content increased the level of contrast, which was somewhat neutralized by news segmentation, though news were still juxtaposed with ads. Newspapers had a low level of resemblance since ads and news were visually different, visual cues were used to signal hierarchy, and partisan arguments were visually contrasted.

**Victorian newspapers (1850-1920)**

The presentation of news during the Victorian years started with a somewhat disorganized juxtaposition and ended with a more organized, more segmented, and visually differentiated content favoring a lower juxtaposition throughout the paper except for the front page.

At the beginning of the period, the news was not fully segmented but the trend of news segmentation continued in newspapers’ inside pages favoring a low juxtaposition. However, some editorial practices and the presence of advertisements in each section still fostered contrast in inside pages. For instance, illustrations were placed separately from their related text and, therefore, could appear anywhere in the newspaper (Barnhurst & Nerone, 2000), contributing to a more chaotic juxtaposition.

Even when inside pages were somewhat segmented in sections, early Victorian front pages had high density and high contrast. Historians’ describe early Victorian front pages as “a dense jungle of
news items and ... advertisements, giving an impression of contrast, randomness, and complexity”, in a time in which crucial matters moved to the front page (Barnhurst & Nerone, 2001, p.215). The new enlarged format that accommodated eight and nine columns (Barnhurst & Nerone, 2001) not only made pages denser but allowed more diverse content in the front page, increasing contrast levels. This high juxtaposition in terms of density and contrast in front pages is especially relevant because it makes top news stories the most vulnerable to noise-factors and context effects due to the high number of possible contrasting primes.

There was low resemblance since visual cues were used to make items look different from one another, but in a way that could mislead readers regarding their content and hierarchy. Historians explain that at the beginning of the period heightened contrasts (obtained with various sizes and lively typography) gave news items a visual impression of (false) hierarchy, but it was until later that editors learned to use these features to mark content shifts and hierarchy. There was also low resemblance between news and ads, which now were more conspicuous since advertisers wanted their ads to be noticed. However, as soon as advertisers took aesthetic risks with their innovative designs, news editors started to follow suit (Barnhurst & Nerone, 2001), increasing again the level of resemblance between ads and news. In addition, advertisements had generous spacing in contrast to the dense gray text of news items tightly packed in columns and sometimes they even occupied the width of two columns (Barnhurst & Nerone, 2001).

The late Victorian period had low contrast because its front page was more thematically and hierarchically organized. Editors started to separate what was considered ‘sacred’ news from more profane content such as advertisements that, at times, disappeared from the front page (Barnhurst & Nerone, 2001). The segmentation of news toward more specific subdivisions and the use of subject heads favored a lower juxtaposition of disparate elements within the same section. Segmentation and other news trends such as enlarged formats, variety in typography, imitation of advertisers’ innovative styles, and marking hierarchy started in earlier periods but reached their culmination in the Victorian era (Barnhurst & Nerone, 2001).

In conclusion, although early Victorian front pages had high levels of juxtaposition in terms of density and contrast, late Victorian front pages were more organized and less juxtaposed. Segmentation continued to decrease contrast in inside pages, though advertisements still appeared in every page increasing, in turn, the level of contrast among items. Resemblance among items was kept generally low; first, due to the use of stylistic cues that were not intended to signal differences in content and,
later, for their right use to signal hierarchy and content shifts. In addition, advertisers kept their ads’ design different from news also favoring a low resemblance level. Overall, these changes decreased the level of juxtaposition, not totally avoiding but limiting possible context effects in the interpretation of news items.

Modern newspapers (1920-1990s)
Modern newspapers continued the decreasing trend in news juxtaposition started in the Victorian era. Journalistic professional ideals and the design revolution gradually changed the complex and crowded Victorian front pages into simpler and more organized pages that accommodated fewer items (Barnhurst & Nerone, 1991). These factors and the transformations they promoted reduced the level of news juxtaposition in its three dimensions in the modern newspaper. Hence, news stories were embedded in simpler contexts with less potential primes diminishing possible context effects.

The most visible and, perhaps, the most significant change in terms of juxtaposition from the Victorian to the Modern newspaper was the number of elements sharing the front page. In an analysis of the visual form of three newspapers’ front pages over a century, Barnhurst and Nerone (1991; 2001) found that the average of news items (such as blocks of text, heads, and images) fell from 58 in 1885 to seven in 1985 and that the average number of stories declined from 32 in 1895 to five in 1985. This implies that density was greatly reduced from the Victorian to the Modern era. This had several consequences for news juxtaposition: front pages looked less dense, more structured, with fewer columns, and fewer news items. More images started to appear in front pages (Nerone & Barnhurst, 1995), which left less space for other news stories favoring less dense pages. For juxtaposition, less-crowded front pages meant less-noisy stimuli competing for attention and, therefore, fewer potential primes. In other words, news’ meanings had less chance of being misinterpreted due to the influence of adjacent news items during their cognitive processing.

There were also low contrast levels in front pages. First, even if the front page showcased the variety of inside content, the low density impeded a high level of juxtaposition in terms of contrast. Second, content was more thematically organized: New layout designs made a distinction between hard and soft news by placing them above or below the fold, respectively (Nerone & Barnhurst, 1995). Finally, the segmentation of news continued in inside pages toward a clearer grouping in sections and lower contrast levels.
Resemblance also decreased during the Modern era, primarily through a clearer representation of hierarchy. Some early Modern front pages had a whirlpool design in which a large number of news items proclaimed their importance through big headlines giving the reader a confusing hierarchization of stories, while late Modern front pages were organized in a “more top-down fashion” and with a clearer hierarchy expressed through the use of typography, headlines, and placement (Barnhurst & Nerone, 2001). For instance, the content considered most important or whose image was judged as having more entertainment value started to appear at the center of the page to attract readers’ visual attention. Editors and designers started to reach balance, harmony, and unity in the front page (Leturia & Barnhurst, 2009).

This historical period was a golden era for news reception. Front pages, which at the time were considered to fulfill the ideals of objectivity (Barnhurst & Nerone, 2001), provided a good context for processing news stories because there was less contamination of meaning from other items. As explained below, this decreasing trend in news juxtaposition totally reversed with the arrival of internet news providing an explosion of potential primes and increasing the probability of context effects.

*Online news*

The first newspapers that started news websites usually offered the same content with a similar design as their printed edition (Barnhurst & Nerone, 2001). But soon most websites started to offer more content and in a more narrowcasted fashion. In home pages, indexes started to appear and news items became mostly headlines. Advertising inundated empty spaces throughout news websites. In addition, following a story through several pages and links exposes readers to more advertisements (Barnhurst, 2010) and to temporal juxtapositions. Therefore, changes in the presentation of news, the overabundance of ads and news items sharing the screen, the logic of indexes and menus, and the appearance of the same story across links, reversed historical trends toward lowering news juxtaposition.

The density of elements largely increased in news websites. In contrast to the gradual but continuous trend of decreasing the average number of news items in newspaper front pages during the late Victorian and Modern eras, the number of news items and ads appearing in news websites increased exponentially. These changes are especially visible in home pages since they are the news websites’ only opportunity for capturing a wide and heterogeneous audience. Home pages have to
showcase items from all news departments and, at the same time, accommodate ads directed to several audiences. This overabundance of news stories and ads shares space with indexes and menus. The number of elements in many home pages easily surpasses the number of items of the most crowded Victorian front pages. And the trend to add more content in home pages still continues. Content analysis studies show that in 2005 news homepages contained much more content than in 2001 (Barnhurst, 2010). Home pages include news items of every topic; from political, economic, and world news to travel and dinning advice, fashion, entertainment, sports, ads, and classifieds. The presentation of these items differs as some have a headline with a brief synthesis of the event while others appear just as a link, some have images and others are videos. This collage of disparate elements greatly increases density and contrast, providing a noisier and more complex context for news reception. However, once the reader follows the link, the density and contrast decrease. In his research about online news, Barnhurst (2012a, 2012b) found that internet editions of news contain longer articles than printed editions in the inside pages.

Higher density and contrast levels in online news were also found in a recent content analysis of home pages of four news websites, which codified the number and type of elements adjacent to tragic news stories (Goya-Martinez, 2009). In terms of density, it was found that 54% of the tragic stories analyzed had between two and three items adjacent to them, while almost 40% had between four and six contiguous elements; the rest had at least seven items close to them. From these elements, almost 84% of the news items were from dissimilar content and slightly more than 16% of the total of items were ads.

In this diverse and saturated visual space, advertisements predominate. Ads can be juxtaposed with other content in several ways; they can appear adjacent to a news item or they can move and superimpose over the content for a few seconds after reaching a smaller size returning to their original place. Inside pages, just as the historical trend in news segmentation, are used for targeting ads to more narrow audiences. Once news websites have more information about the user’s preferences, the advertisements can also be personalized. The idea of juxtaposing ads and news is also present in some advertising software that places advertisements by matching words that appear in news stories with certain products. The match could be beneficial for the ad, as advertising basketball gears in a news story about a basketball game, or detrimental as in the case in which a luggage advertisement appeared juxtaposed with a news article about a murder in which a suitcase was involved (Palser, 2003).

Nevertheless, some internet news outlets are also worried about news juxtaposition and its possible
consequences. In a recent interview with Charlie Rose, Google’s vice president, Marissa Meyer, pointed out the company’s initial worries about placing advertisements adjacent to news in their website as if juxtaposition could be inappropriate in certain kinds of news content: “there are certain type of news stories that they just didn’t feel it was appropriate to run advertisements along side ... We really wanted to be sure that the ads being shown were relevant and that they were tasteful”\(^7\).

The repetition and the follow up of stories within the same page and across several links of the same webpage also increases contrast levels. The number of screens for each story has also increased (Barnhurst, 2010) and, therefore, the same news event appears temporally and spatially juxtaposed with different elements in different parts of the website. However, once the reader follows a link, the number of elements in the page drastically drops reducing density and contrast levels. However, temporal juxtaposition of items in online news adds a more complex and unpredictable contrast among news stories. While traditional printed papers have some temporal juxtaposition when the reader browses the pages, online news media connect news stories with a highly diverse pool of items from several sections and from other internet pages outside the news website. This temporal juxtaposition, though somewhat proposed by the news provider through the appearance of links, is in part controlled by the reader.

Finally, in terms of resemblance, there are two opposite trends that operate simultaneously. First, several items look alike. For instance, a large majority of news titles and ads appear just as links. Without reading the headline, it is not possible to recognize differences in content among those links. Other items, such as fashion or entertainment news and ads, are also similar and it is difficult to distinguish one from the other. In this sense, “web design flattens the steep hierarchy of the modern front page” (Barnhurst & Nerone, 2001, p. 286). However, some online editors consider important to give users a representation of hierarchy similar to that offered in printed news by using large headlines and strategic placement of important stories on the top of the home page (Lowrey, 1999).

In conclusion, online newspapers totally reversed the decreasing trend in news juxtaposition started in the Victorian era and reaching its peak in the Modern period. Online news websites present densely crowded homepages providing a huge number of noisy stimuli that can work as potential primes when reading a specific news story. This collage of items gives the impression of a low hierarchization of news items, increasing their resemblance to one another. Many of these changes seem to be fostered

by advertisers and editors’ pressures to increase online traffic. Finally, the multiple links among items offers an unpredictable and extremely diverse temporal juxtaposition, highly increasing the level of contrast.

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<td>↑ Printers’ practices</td>
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<td>↓ Predominant political content</td>
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<td>↑ More columns</td>
<td>↓ Advertising innovations</td>
</tr>
<tr>
<td></td>
<td>↓ News segmentation</td>
<td>↑ Larger size</td>
<td>↓ Hierarchical organization</td>
</tr>
<tr>
<td></td>
<td>↓ Ads narrowcasting</td>
<td></td>
<td>↓ Expression of contrast</td>
</tr>
<tr>
<td><strong>Victorian</strong></td>
<td>↑ Diverse front page</td>
<td>↑ Enlarged format, 8-9 columns</td>
<td>↓ Ads’ size growth</td>
</tr>
<tr>
<td></td>
<td>↑ Crowded front pages</td>
<td></td>
<td>↓ Ads white space</td>
</tr>
<tr>
<td></td>
<td>↑ Ads more mixed with news</td>
<td></td>
<td>↓ Visual cues used giving</td>
</tr>
<tr>
<td>Early</td>
<td>↑ Unsegmented news</td>
<td></td>
<td>impression of (false) hierarchy</td>
</tr>
<tr>
<td></td>
<td>↑ Miscellaneous content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Late</td>
<td>↓ Segmented news</td>
<td></td>
<td>Late</td>
</tr>
<tr>
<td></td>
<td>↓ Division sacred/profane</td>
<td></td>
<td>↓ Better visual organization</td>
</tr>
<tr>
<td><strong>Modern</strong></td>
<td>↑ Diverse front page</td>
<td>↓ Fewer items on more space</td>
<td>Early</td>
</tr>
<tr>
<td></td>
<td>↓ Segmentation</td>
<td>↓ Fewer columns</td>
<td>↑ Whirlpool design</td>
</tr>
<tr>
<td></td>
<td>↓ Decline of number of elements in front pages</td>
<td>↓ Decline of number of elements in front pages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>↓ Hard vs. soft</td>
<td>↓ Few elements in Tabloids’ front pages</td>
<td>Late</td>
</tr>
<tr>
<td><strong>Online News</strong></td>
<td>↑ Abundance of news items and ads</td>
<td>↑ Abundance of news items in home pages</td>
<td>↑ News items presented in a list of links</td>
</tr>
<tr>
<td></td>
<td>↑ Logic of index</td>
<td>↑ Excess of ads</td>
<td>↑ Flattening of hierarchy</td>
</tr>
<tr>
<td></td>
<td>↑ Same story juxtaposed several times with different elements</td>
<td>↓ Diminishing of elements in the display of individual news articles</td>
<td>↑ Some still top stories</td>
</tr>
<tr>
<td></td>
<td>↑ Links among stories: temporal juxtaposition</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

↓ Features lowering juxtaposition ↑ Features increasing juxtaposition
Discussion and Possible Implications

Changes in news juxtaposition are gradual and rarely unidirectional. Economic, social, cultural, and technological forces have been behind most of these changes. During the same historical era, some elements and design features increased while others decreased juxtaposition. The juxtaposition of news gradually and continuously decreased in its three dimensions until the internet. Table 18 gives a perspective of the evolution of news juxtaposition from colonial newspapers to online news.

Online news has not followed the historical trajectory in terms of news juxtaposition. One possible explanation could be that online news, by being a new and different medium than printed newspapers, is still immature and in some years will follow the historical trajectory by moving from a dense environment to a less saturated representation of news. However, this possible future seems unlikely. Advertisers still ask news outlets for a more diverse consumer pool to showcase their products. Homepages are the only opportunity for most news outlets to capture extremely diverse audiences, some of them interested in entertainment and others in political and world news. Consequently, these economic pressures, along many others, have been an important factor for increasing the contrast of news items (and also for including ads in every page), saturating front pages, and segmenting content in inside pages. Finally, although technological innovations have not been the main force behind the introduction of design features (Barnhurst & Nerone, 1991), certainly moving news items from the paper to the screen –allowing news to be hyperlinked, erasing space limits, and imposing the logic of index and network– also influences the way online news present information.

Contrast has historically increased to appeal to wider and more heterogeneous audiences. It reaches its highest levels in online homepages, surpassing even the levels of the crowded Victorian front pages due to the increase in spatial and temporal juxtapositions. Based on the experimental results, mixing heterogeneous content and, thus, increasing contrast levels do not necessarily foster trivialization or the flattening of news hierarchies. For instance, in terms of content category, the combination most prone to contrast and least prone to assimilation was the mixing of trivial and tragic news items, and, in terms of importance level, the most prone to contrast was the combination of items rated high and low or high and medium in the no-prime condition. In addition, pairs in which the two items were from the same content category were more prone to assimilation (if taken into account assimilated-contrasts, see Chapter VI). In terms of the juxtaposition of news and ads, it has been found that it increases the perceived importance of some kinds of news stories (Biocca et al., 1992). Therefore, it could be hypothesized that news segmentation fosters assimilation while the mixing of heterogeneous
content is less prone to assimilation probably fostering contrast effects. Since only three content categories were tested in the experiment, this hypothesis would still have to be proved with other content categories in follow up studies, which should also extend previous research on the influence of different kinds of ads on the perception of news.

In terms of density, there was a historical trend to gradually increase the size of newspapers’ format until the Modern period. This trend was reversed in online news. It is difficult to hypothesize what this increase in density levels actually implies for meaning making processes and in terms of context effects. Adding more elements in the front page certainly increases the complexity of the juxtaposition and the number of contextual elements, i.e. possible primes. However, the results of the experiment give no clues about the possible effects that a higher level of density could foster. On the one hand, it could be hypothesized that, by increasing the number of adjacent spatial and temporal primes, the influence of any of these on a particular news item diminishes. In other words, if two elements share the same visual space, the influence of these upon each other could be larger than if a target item is surrounded by ten different elements. It can also be argued that, in a dense juxtaposition, elements’ influence on a particular item might cancel each other or, on the contrary, might accumulate, depending on the specific combination of items from different content categories and their resemblance. In addition, the network model of context effects proposed in Chapter IV would predict that no matter how dense the environment is, the individual has memory and attention limitations – represented by the number of graders in the evaluative layer of the model– and goals and motivations that would limit the number of possible primes and their influence in the evaluation process. In any case, it is very difficult to predict or even hypothesize – at the moment– the possible effects of a very high dense homepage. However, since this is the most common layout of online news pages, it is worth to explore these questions in future studies. The present experiment could be the beginning of a larger set of experiments that could give some answers to the meaning making processes in a highly dense news environment.

In terms of resemblance, newspapers started to organize news in a more hierarchical way until online news, in which several but disparate elements are visually similar in the form of links and in which some ads and news with dramatic images and videos also appear alike. Based on the results of the experiment, changes in resemblance levels would probably affect the probability of assimilation effects among items in the reception of news. It could be hypothesized that high levels of resemblance, which visually signal similar content, probably increase the likelihood of assimilation effects. This could be the
case since items from the same content category were more prone to assimilation and assimilated-contrast in the experiment and, following the Gestalt principle of similarity, looking visually similar might increase items’ probability of being assimilated. On the contrary, if they look different, it probably reduces their probability of being assimilated since visually they appear to be different in content. These hypotheses, of course, would have to be tested in future studies since the present experiment did not manipulate resemblance between news items.

This recent increase in juxtaposition makes the present study more theoretically relevant and points to the necessity to empirically continue testing the effects of news juxtaposition in readers’ interpretation and evaluation of news events. This study just began to unravel the effects of juxtaposition in readers’ evaluation processes of news events.
CHAPTER VIII

MEDIA EFFECTS:
THE MARGINALIZED ELEMENT IN THEORIES OF DEMOCRATIC COMMUNICATION

Among the main worries of theories of democratic communication, two issues related to public opinion receive special attention: the possibility of a rational public debate and objectivity in news media as well as in the public sphere. In their postulates of how media should function in a democratic society, these theories sometimes ignore and others underestimate some characteristics of human nature, such as our cognitive system, and the effects of media—especially, of news contexts—on our representation of reality. In addition, most of these theories construct their arguments upon ideals that are very difficult and sometimes impossible to achieve regarding human nature as well as economic, political, social, and media systems. Instead, communication theories should propose what can be done to improve the status quo taking into account the real—not ideal—conditions of the world we live in. This discussion already exists in the literature; here is my contribution to it.

The Epistemological Problem

There are many epistemological questions that lie behind the communication of an event. Participants as well as witnesses have a direct though partial experience of what happened. News media reporters can interview all of them and even relate the event with the current historical context and with broader political, economical, social, and cultural issues, but still they get a partial reconstruction of the event. Finally, the reader or viewer indirectly perceives the event through the lenses of one or various news reporters. On the one hand, each of the actors involved in the perception, communication, and reception of the news event, naturally—due to the way the human cognitive system works—interprets what happened according to her or his own personal experiences and knowledge. Even those journalists that really try to follow the professional code of objectivity are not able to get an exact and complete description of the event. On the other hand, some of the actors involved, moved by their own interests or by external pressures, intentionally frame the event in one or several ways when they communicate.
it. In addition, after being naturally and intentionally framed, the event story is embedded in news contexts that will also affect the way it is interpreted and evaluated.

Regarding this epistemological problem, two main intellectual positions appear in the literature\(^1\). First, liberals and modernists, who in general believe in the exactness of science and in the possibility of discovering the truth by using the human reason (Siebert, Peterson, & Schramm, 1963), are not very worried about this problem since, among other reasons, many of them believe that journalistic objectivity is reachable and desirable, and that in the marketplace of ideas “truth naturally overcomes falsehood when they are allowed to compete” (Smith, 1988, p. 31). Thus, it doesn’t matter if a news reporter frames the event –either naturally or intentionally– or if it is affected by news contexts, because in the marketplace good ideas survive and bad ideas are lost into oblivion. By the same token, liberals and modernists unconditionally support the freedom of expression (Peters, 2005), for which media need to be private as to avoid government influence, since it does not matter if some people publish offenses or if they try to manipulate people with their messages, the free trade of ideas along with the human reason are able to resolve such mishaps and discover the truth.

By contrast, postmodern and cultural studies thinkers, who lost faith in science and reason, think that the discussion about natural frames is futile, since reality is not something to be perceived or discovered but constructed. There is not one truth but many or, in other words, the truth is something relative –which goes in line with the finding that our evaluations are relative due to the existence of priming and context effects. In this way, journalistic objectivity is unreachable and trying to achieve it is not desirable, since critical journalism should openly take a position and bring up controversy if necessary. Cultural thinkers would not be worried about the intentional frames if there were a truly diverse news media system instead of a quasi-monopoly of messages controlled by media conglomerates. However, they still believe that media –especially non-profit, minority, and community media– are good forums for public deliberation and common decision-making.

Some thinkers who do not fit in the above descriptions, like Habermas and Lippmann, also have a position regarding the epistemological questions that lie behind the communication of an event. Habermas (1991), classified by some authors as liberal (Peters, 2005), is not concerned if and how actors naturally impose frames in their understanding and communication of events since, once in the public sphere, private people are able to disembody their arguments and participate in the debate as equals, a

\(^1\) For a matter of simplicity, this essay describes these positions in their extreme forms.
view criticized by cultural and critical studies thinkers, especially from the perspective of gender, race, and class. Despite natural frames, private people who join together to deliberate form a rational public that delivers a rational public opinion. This rational public opinion is not, however, the result of the free trade of ideas but of face-to-face dialogue in which private people share meanings and concerns reaching a rational consensus. Habermas, like liberals, believes in the possibility of journalistic objectivity since he explains that the press acted as a carrier of public opinion in the early years of the public sphere. However, like critical thinkers, he considers that when the press openly took ideological sides it enriched the public debate. Habermas is worried about intentional frames when instead of fostering the public debate they manipulate it. According to him, the press was and the media could be, if it were not for their exaggerated focus on leisure and their aims at shaping public opinion, a facilitator of a rational public debate.

Lippmann, implicitly (Carey, 2008) and explicitly (Peters, 2005, p. 20) classified by some authors as liberal, is, unlike both liberals and postmodernists, truly worried—showing an intuitive cognitive approach—about both kinds of frames involved in the epistemological problem of perceiving and communicating an event, though he also overlooks contexts. Participants as well as witnesses cannot get a naïve idea of the event. Perception necessarily involves distortion since individuals cannot perceive a stimulus if they do not blend it with their own stereotypes. Hence, perception and interpretation are the result of the combination of top-down and bottom-up processes. In addition, journalists not only blend the information they get from their sources with their own prejudices and knowledge but sometimes they also pursue their own or others’ agendas when reporting the event to the public. In this way, members of the public get naturally and intentionally framed information, which is again perceived according to their own ideological and personal filters. Thus, news media cannot be objective but, somewhat agreeing with postmodernists’ view about the social construction of reality (Berger, 1969), their reports construct a picture of the event that becomes accepted as real and, thus, it has real consequences. In addition, Lippmann, as intellectual father of the agenda setting paradigm, recognizes that media confer status to the events they choose to report as something important, while events not reported remain hidden in the darkness. In this way, instead of proposing a normative media theory, Lippmann gives a critical account of the influence of media in public opinion.

Lippmann is not alone in this position. Other classical thinkers such as Mills and Popper agree in the idea that humans do not perceive facts directly but only indirectly through their ideological and experiential lenses. Mills (1956) explains that individuals cannot experience raw events because, even in
those cases in which they have a primary direct experience of an event, they organize it in stereotypes and read it according to their beliefs and feelings. Similarly, Popper (2002) explains that observers pay attention to certain things ignoring others and their minds impose ideas on the things perceived. Even Dewey (1927), who like Habermas believes in the possibility of a rational consensus (Carey, 1989), recognizes that facts and meaning are different things and facts alone cannot be interpreted if it is not through a doctrine.

These four positions regarding the epistemological problems posed by the communication and perception of an event offer different views about the political deliberation in the public sphere and about public opinion. Liberals and Habermas believe in the possibility of a rational public debate in which, be it due to the invisible hand of the market or to a critical dialogue, a rational public opinion can come out of it. Postmodernists are not so worried about the rationality of the debate but about how different publics are represented in it and how together, after a power struggle between dominant and subaltern views, can reach a consensus that contributes to the common good. Finally, Lippmann’s view does not support the idea of a rational debate but, on the contrary, considers that idea unrealistic since an uninformed and manipulated public, which deals with propaganda and pseudo-events, is not in a suitable position for political decision-making.

A Rational Public Debate

The most common and the oldest of these positions is rationalism. Started in Western thought by the Greek philosophers and continued by Enlightenment and liberal thinkers (Christians, Glasser, McQuail, Nordenstreng, & White, 2009), the idea of human as a rational animal capable of distinguishing truth from falsehood has deeply penetrated the political arena. Two important elements are missing from liberals’ and Habermas’s belief in a rational public and a rational public opinion: the nature of the human cognitive system and media influence. Postmodernists and critical media thinkers recognize media influence but do not give a lot of importance to it when making normative theories of media in democratic nations. In fact, probably due to intellectual splits and differences in communication theory, they marginalize and underestimate the importance of these effects in their normative theories. Postmodernists distrust reason and science, but science, however, gives a very powerful argument favoring their disbelief in human reason.

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72 E.g., Christians et al. (2009), Nerone (1995), and Peters (2005).
If a clear conclusion can come out of the cognitive media effects tradition—including agenda setting, framing, priming, and context effects, which have a scientific approach to phenomena—is that humans are cognitive misers who normally use the information they have ‘at hand’ when evaluating and interpreting a news event or a political figure. The great advantage of the human cognitive system, which makes it extraordinarily efficient for organizing stimuli and facilitating the comprehension of new scenarios and circumstances by using shortcuts, heuristics, stereotypes, and generalizations, is also a disadvantage in terms of media effects since it makes humans vulnerable to the amount of information received, to the elements highlighted in the news, to the language employed to describe events, and—as seen in the present study—to the contexts in which news items are embedded. In this way, favoring Lippmann’s argument, media effects distort thinking processes and thinking outputs. These factors make human evaluations relative, at least to a certain extent.

Since humans are cognitive misers, the most recently and frequently used concepts are more likely to be used when interpreting and evaluating stimuli. Media messages affect cognitive processes by altering the recency and frequency of activation of mental concepts (Price & Tewksbury, 1997). Frames and contexts alter the recency of activation. The elements highlighted in a news story to describe a social problem influence the kind of concepts activated in readers’ and viewers’ minds affecting, therefore, how they mentally represent the phenomenon. Similarly, spatial and temporal contexts activate ideas as well as emotions on the perceiver, whose residual activations might affect the perception and evaluation of subsequent news events (see Chapters IV and VI). Agenda setting, which refers to the capacity of media of influencing individuals’ rankings of the most important social and political issues by giving more saliency to some events and by ignoring others, alters the frequency with which a concept is activated. In addition, if a particular frame or context is specially promoted by news media, the elements are more likely to be associated in memory and their frequency of activation would also be increased making them more likely to participate in the processing of subsequent information. Recency and frequency, which can be understood as short and long term priming effects, make evaluations relative. If human evaluations are somewhat relative, they are also unstable, and thus, not very rational.

Examples of how the content and presentation of messages affect individuals’ evaluations abound. The classic framing experiment described by Kahneman and Tversky (1983; Entman, 1993) in which participants have to choose between two alternative programs to confront the outbreak of an unusual disease, shows that the language employed to describe each of the programs modified
respondents’ support toward them. Half of the participants had to choose between program A, in which 200 people will be saved, and program B, in which “there is a one-third probability that 600 people will be saved and two-thirds probability that no people will be saved” (p. 343). The vast majority of respondents chose program A. The other half of the participants received a different version of the two programs: program C, in which 400 people will die, and program D, in which “there is a one-third probability that nobody will die and a two-thirds probability that 600 people will die” (p. 343). In this case, the vast majority chose program D. It is clear to see that programs A and C and programs B and D were identical. However, highlighting either the number of people dead or the number of people living changed the general evaluation of each group. Even simple word choices in news articles and media discourses can influence readers’ and viewers’ responses to events; for instance, the exclusive use of the words “baby” or “fetus” in reproduction discourses decreases or increases, respectively, individuals’ support for abortion practices (Simon & Jerit, 2007).

In terms of presentation of messages, research has found that the context in which a message is received as well as the context in which it is embedded affect individuals’ decision-making processes as well as interpretations and evaluations of stimuli (see Chapter III). For instance, it was found that voting locations, such as voting in a school or in an office, affect voters’ support and approval of a school funding initiative (Berger, Meredith, & Wheeler, 2008). Similarly, extensive advertising research shows that the messages surrounding an ad in a magazine as well as in radio, television, and web pages significantly affect individuals’ liking and evaluations of the ad and the advertised product. And, shown in the present experiment, the evaluation of a news event is not the same when it appears alone in a page than when it is juxtaposed with another item and it also changes depending on the content category and importance level of the adjacent element.

These cognitive media effects affect more people since the public sphere became really inclusive. Habermas praises but at the same time laments the enlargement of the public sphere from being an exclusive reading public, whose members were property owners, to an inclusive massive public that includes all or most social classes. When penny presses reduced the cost of accessing printed news, the public sphere was democratized in the sense that more people could participate in the public deliberation. This also happened with the development of other media that started to appeal not only to literate but to the illiterate individuals, like film, radio, and television. For Habermas, the price of this democratization was the lowering of the quality of public deliberation and of media messages, which

became mostly leisure and started to be heavily juxtaposed with advertisements. Since individuals’ opinions are not completely rational because they are vulnerable to media effects, liberals’ and Habermas’s rational public deliberation argument is more difficult to sustain in an inclusive rather than an exclusive public sphere, because some media effects might discriminate in terms of education level. For instance, a priming experiment conducted by Herr (1989) explores how individual knowledge differences mediate priming effects. The study found that respondents with high levels of knowledge about the primed category were less vulnerable to priming influences than respondents with low knowledge levels.

Still, it might be argued that, even if the individual opinion is relative and not totally rational, the collection of individual opinions has a rational output (Siebert et al., 1963; Page & Shapiro, 1992). This argument favors liberals’ and Habermas’s thesis that the debate in the public sphere generates a rational public opinion or a rational consensus, despite the insufficient rationality of private individuals participating in it. In fact, liberals claim that the individual is also free of being mistaken, but that it does not matter since the marketplace of ideas guarantees “that some approximation of the truth will be reached” (Christians et al., 2009, p. 49). Page and Shapiro (1992) argue that a public opinion poll acts as a kind of collective wisdom, since, in the aggregate, opinions show central, stable, coherent, and, therefore, rational properties. Behind this thesis, implicitly lies the idea that it does not matter which kind of messages and news contexts the different media present because, in the aggregate, opposing messages and their effects on individuals cancel each other, giving as a result a more rational outcome than isolated individual opinions.

While certainly the aggregated public opinion might be more rational than the individual opinion, this argument looks only to one side of the issue, the individual, without paying attention to the other side, the media. For this argument to work, opposing media messages should have equal presence in the marketplace as well as in the aggregate of individuals’ media diets. This not only needs the inexistence of media monopolies but also the absence of the monopolization of ideas, because, even in an idealized world without media conglomerates, the richer individual has more opportunity of publicizing her or his ideas or media owners might act as a cartel to promote a common agenda. Zaller’s (1996) reception gap model illustrates that when there are two main opposing messages in the mass media, there is a ‘reception gap’ or difference rate among the reception of both messages in individuals. The individuals with largest reception gaps are those “who score in the middle range of habitual news reception” (Zaller, 1996, p.25), who are also more likely to switch their opinion toward the most salient
message. Thus, the message most publicized creates a reception gap on the average media consumer, possibly swaying the aggregate of individual opinions.

Christians et al. (2009) criticize Page and Shapiro’s perspective about how the aggregate of individual opinions results in collective wisdom, but propose that the aggregate of individual opinions at the level of community publics does generate a collective wisdom. This argument falls by itself not only because private people who join small communities usually share common interests but also because they share media diets more than people from different communities. Thus, the effect of similar messages is more pronounced in these micro-public-spheres than in the general public opinion and certainly tends toward polarization. Following Zaller’s theory, members of small communities who share common interests are more likely to have a larger reception gap toward the same message than the members of the general public opinion.

Historically, media manipulation of information has affected not only individual public opinions but their aggregate as well. Propaganda and public relations have been able to change the public opinion of a whole country in war times, as it happened in World War I, with Goebbels’s Germany and its Nazi propaganda, and with the reversed of public opinion orchestrated by the Committee on Public Information in the United States (Mock & Larson, 1968; Sproule, 1987). Propaganda has shown that massive media effects, when most channels of communication transmit similar messages, are possible. Even when Lazarsfeld’s legacy changed the view within the academy about the magnitude and generalization of media effects (Sproule, 1987), contemporary researchers74 as well as contemporary propaganda campaigns, such as the fiction created about the treatment of Kuwaiti babies by Iraqi people in the Gulf War (Renshon, 1993), show that massive media effects might still take place. It could be argued that, since these propaganda campaigns are already publicly known in the public sphere, the public opinion eventually moves towards a more rational outcome. However, these cases of manipulation of information and propaganda show that intentional frames can have an important impact in political decision making in the short term.

The existence of media conglomerates, which become larger and stronger every day, makes the prospect of propaganda and the swaying of public opinion a real possibility. Even in the cases in which many media channels are not from the same owner, they might have similar messages due to the monopolization of news production and distribution by a few news agencies that concentrate the news

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74E.g., Noelle-Neumann (1974; 1993) and Zaller (1996).
market. While many authors see with optimism the rise of cyberspace and its multiplicity of channels of information and communication that apparently eliminate somewhat the influence of media conglomerates, the development of natural monopolies in the web—such as Facebook and Twitter in social media, Youtube in video streaming, and Google and Yahoo in search engines—homogenizes at some level information, be it in form and/or in content.

Beyond media effects, as Mills (1956) points out, human rationality has been also challenged by authors like Freud (1929), who revealed the irrationality of the common individual and its tendency to violence, and by Marx, who showed that humans are not autonomous but socially conditioned. Favoring Marx’s argument and opposed to the idea of a rational public, current research on crowd wisdom also shows that social influence, understood as individuals’ knowledge about others’ opinions, undermines the accuracy and rationality of the aggregate of individual opinions. A recent ecological experiment by Lorenz, Rauhut, Schweitzer, and Helbing (2011) demonstrates that, while the averaged judgment of several individuals might produce some sort of ‘collective wisdom’ when compared with the opinions of isolated individuals, the crowd wisdom paradigm fails when participants know other participants’ opinions. Researchers found that even mild social influence distorts the aggregate of individual estimates, whose output cannot be considered wise or rational. Public forums of discussion as well as the averaged individual opinions from public polls are not free from social and media influence, and thus, their outputs might not be as rational as suggested by Habermas and liberal thinkers.

Social influence on individual opinions goes beyond the simple fact of knowing others’ opinions. The classic experiment on social pressure conducted by Asch (1955; Noelle-Neumann, 1993), in which participants had to choose among three lines which one matched a sample line’s length, shows how individuals might publicly follow the opinion of the majority even when they know it is mistaken. In each session, eight to ten participants had to publicly express one by one their choice about which line matched the sample line. In the first two rounds, all participants chose the right line. After that, in the following ten rounds, seven to nine participants, who were undercover experimenter’s assistants, publicly chose a line that was visibly shorter than the sample line. After repeating more than fifty times the same experiment, results show that six from every ten participants more frequently followed the opinion of the majority even when they knew it was clearly mistaken. What this tells us is that even in those few cases where humans can elaborate rational opinions, not all of them will express them in a public deliberation. And this equally applies to Habermas’s idealized public sphere, to liberals’ marketplace, and to the multiplicity of publics proposed by some feminists and critical postmodern
thinkers (e.g. Fraser, 1995; Squires, 2001). Micro public-spheres neither assure rationality nor fairness, since those most resistant to social pressure dominate the formation of the micro public opinion. Feminists and postmodern thinkers suggest that these micro publics allow minorities and marginalized groups to generate their own discourses, meanings, and identities, which can then be publicized in society and can contribute to the broader public deliberation. However, the dynamics of social pressure and power struggles also take place within these micro publics and can even be exacerbated since the smaller the public the less anonymous is the participation of the individual. In addition, since most of their members share common interests and similar media diets, opinions are easily polarized and the social pressure on the disagreeing members is exacerbated.

Media monopolization of information, be it in conglomerates or in community media, strengthens social influence and social pressure by offering a not very diverse pool of messages and by publicizing public opinion surveys and leaders’ opinions, which can affect the aggregate of individual opinions as suggested by Noelle-Neumann’s (1974, 1993) spiral of silence theory. In her survey study about the formation of public opinion, Noelle-Neumann found that most subjects were not willing to express their opinion in controversial subjects if they felt they did not share the opinion of the majority. Individuals’ assessment of the opinion of the majority is not accurate and it is usually based on the most publicized, rather than the mostly held, opinion. In this way, there are situations in which many individuals think they are the minority, when in reality they are the majority, but because they do not speak up their opinion for fear of isolation, their erroneous assessment becomes correct.

In conclusion, the idea of a rational public debate is based on an idealization of human nature. It does not take into account the vulnerability of the human mind to media effects and individuals’ susceptibility to social influence. Arguments accepting the irrationality of individual opinions but claiming the rationality of their aggregate do not take into account the asymmetry in media messages, exacerbated by the existence of media monopolies, which produces a reception gap in the average media consumer with the capacity of swaying public opinion. In addition, the idea of a rational public opinion undermines the effects of propaganda and how social pressure might influence individuals to remain silent about their true opinion. Individuals’ susceptibility to media effects and social influence transform the idea of a rational public opinion into a malleable public opinion, which corresponds more to the early definition of the word opinion as a judgment lacking certainty and rationality (Habermas, 1991). This fact has been known to spin doctors since the early years of public relation campaigns (e.g., Bernays, 1928).
Objectivity

Liberals’ belief in the effectiveness of a marketplace of ideas is partly based on the assumption that media can be objective and neutral (Peters, 2005; Siebert et al., 1963). Habermas and Jefferson, who propose a face-to-face deliberation and a town meeting to generate a natural rational consensus, recognize that this is not possible in large nations and, thus, the press is the agent that facilitates such deliberations (Habermas, 1991; Nerone, 1995). The press, in this account, is considered by both as capable of being a neutral carrier of private people’s arguments; in other words, just a mediator or intensifier of public discussion. Habermas (1991) also believes in the possibility of an objective public sphere in which private persons disembody their arguments when deliberating, which allows them to participate as socially equal. In contrast, for critical postmodern thinkers, for whom everything is relative (Peters, 2005), and for Lippmann, who understands natural and intentional frames, objectivity—whether in media or in the public sphere—is simply unrealistic. As Popper (2002) recognizes, even science is not a totally objective enterprise since the observation of natural and social phenomena is selective and always starts with an idea or hypothesis.

If human experience about events cannot be direct and unframed, then objectivity is not reachable either in the media or in the public debate. In addition, language, the main instrument through which events are described and arguments are postulated, is not a neutral carrier of ideas; on the contrary, language is always ideologically charged. Besides being unreachable, objectivity cannot be attained because private individuals as well as groups and organizations have their own agendas and push them in the media as well as in their discourses and actions.

In the Media

The idea of media objectivity, materialized in the code of objectivity and the professionalization of the media worker, was promoted by media companies due to economic imperatives. It made easier and cheaper the transferring and adaptation of information from news agencies to media outlets (Altschull, 1995) by creating standard news formats (Bennett, 2008). And, it also tried to recover audiences’ credibility in the media after the war propaganda. News agencies wanted to increase circulation and, thus, they instructed reporters to eliminate political biases since their clients were both Democrats and Republicans (Siebert et al., 1963). Several authors agree that journalistic objectivity cannot be achieved because, among other reasons, political events have inherent values, newsmakers
promote their own interests, journalists’ have their own backgrounds and values, and because it is impossible to address the multiplicity of different points of view of an issue (Bennett, 2008; Nerone, 1995). Besides all this, journalists are not less immune to media effects and they are heavily exposed to media messages. Media’s code of objectivity has been heavily criticized by theorists not only for being unreachable but mainly because, ironically, it promotes certain biases (Altschull, 1995; Bennett, 2008). For Altschull, the code of objectivity “hallows bias, for it safeguards the system against the explosive pressures for change” (1995, p. 63), reinforcing in this way the status quo.

This lack of objectivity is clearly visible in the selection of the events covered and in how these are described, which are media practices studied by the agenda setting and framing paradigms, respectively. Similarly, the standardized forms for presenting news events contribute to frame them and, thus, are also not objective. For instance, the front page and the inverted pyramid, which signal the event’s importance and its most important aspects, show editors’ and reporters’ subjective representation of reality since they have to rank stories and their elements (Tuchman, 1972). In addition, it has been found in eye-tracking as well as in journalism studies that visual features used to present events such as fonts, colors, and formats have perceptual biases that affect items’ saliency levels75 (see Chapter VII). Despite of this, it is commonly assumed that news layouts are the result of professional and neutral journalistic practices (Barnhurst, 1993).

As it has been argued throughout this thesis, an element in which the lack of objectivity of news media is usually overlooked when talking about public opinion and in which the effects are mostly unintended is the context in which news items appear. News events cannot appear isolated; they are always spatially or temporally juxtaposed with other items, which might affect their interpretation and evaluation. The messages surrounding a news item can activate mental representations in the receiver which, by being highly accessible, are likely to be used in its further processing. These adjacent messages might activate cognitive as well as affective responses toward the news item, modifying or distorting individuals’ attitudes and political opinions toward the event. As shown in the present study, individuals’ evaluations of a news event in terms of importance, interest, and potential participation can be affected by the adjacent item placed close to it. These juxtapositions, along with other kinds of media effects, contribute to the relative and unstable nature of individuals’ judgments, preventing their opinions from being totally objective.

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75 E.g., Click and Stempel (1976), Holmqvist, et al., (2003), Leturia and Barnhurst (2009), and Middlestadt and Barnhurst (1999), among others.
Media companies’ need for profits is one of the factors that has increased the levels of juxtaposition in media in three ways; though, as explained in the previous chapter, the effects of this still have to be tested. First, media companies include more leisure in their content because it attracts a broader audience. Second, they also include more advertisements in their pages. Finally, newspapers and, especially, online news websites try to incorporate many items from different sections together in their front and home pages as to attract broader and more diverse audiences. The flood of entertainment in media has been severely criticized by theorists for “debasing the level of general culture” (Nerone, 1995, p. 13) by adapting it to a less educated and less informed public (Habermas, 1991). It has also been claimed that, even if unintended, amusement media divert attention from politics (Dewey, 1927).

Looking at the current media system in which news, leisure, and ads are heavily juxtaposed, in which the amount of space and time dedicated to leisure and ads increases every day, and in which media outlets are owned by fewer hands, it is not absurd to ask, as proposed by the authors of Four theories of the press, if communication systems reflect the society in which they operate (Siebert, et al., 1956). This thesis, heavily criticized in the literature, seems to apply in this respect to the current media system that reflects the global capitalist society we live in.

In debates regarding media objectivity, liberals and critical postmodern thinkers do not agree regarding who should own the media. Liberals think that media can be objective and that the marketplace of ideas ideally works when media companies are free from government intervention, which implies private media ownership. This kind of ownership usually requires the subscription of consumers or/and the selling of advertising spaces to advertisers. The latter is heavily criticized by critical thinkers, who favor public subsidies for media, since being privately owned does not mean being free of outsiders’ pressures regarding media content. In fact, they claim that advertisers have an important role in defining media content in privately owned media companies, which is the main cause behind the flood of leisure and advertisement and of avoiding controversial themes in media messages (Nerone, 1995). Certainly, advertisers’ exert a lot of pressure to media companies regarding media content, first, to attract a broader audience, and, second, to avoid getting their product juxtaposed with unwanted messages76. Still, it is not clear which influence, whether governments’ or advertisers’, is less damaging to public opinion. It could be argued that government’s influence would be a more monopolized intervention than that of advertisers who are many and whose influence is more indirect.

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If media—due to journalists’ natural frames, intentional frames imposed by news makers and journalists alike, and individuals’ vulnerability to media effects—do not show an objective representation of reality, then, what can be done? The problem has not been totally solved by the solutions proposed in the literature. On the one hand, Lippmann, totally ignoring and contradicting all his cognitive psychological intuitions, proposes to generate an independent group of experts that could “break down the drama, break through the stereotypes, and offer men a picture of facts, which is unfamiliar and to them impersonal” (1922, p. 198). According to this view, experts would be a special kind of individuals: not only would they need a different cognitive system—as to avoid blending the stimuli perceived with their own ideas—but should also be capable of total objectivity—since they would not promote their own agendas and could totally put aside their private beliefs when making the unseen facts intelligible. Like ordinary humans, experts perceive reality through natural frames and having expertise in no way guarantees honesty. Experts might promote their own agendas and would be able to do this very powerfully and persuasively if they are believed to represent reality accurately. Besides, Lippmann’s contradicts himself regarding his opinions about expertise; he explains that expertise might blind individuals as to exaggerate “the normal human habit of trying to squeeze into our stereotypes all that can be squeezed, and of casting into darkness that which does not fit” (Lippmann, 1922, p. 64).

Critical postmodern thinkers, on the other hand, propose a more diverse media system in which communities could participate in the production, selection, and organization of messages, and, contrary to the unrealistic professional code of objectivity, a clear communication in which reporters freely and openly express their ideological positions to audiences (Nerone, 1995). Since frames are unavoidable, individuals and communities should participate together in the social construction of reality presented through media. Then, perhaps, news media could facilitate public deliberation in the public sphere as Habermas (1991) proposes. These ideas correspond to the objectives of the communitarian and advancing—also called citizen participation—movements of the press (Altschull, 1995; Christians et al., 2009), which propose that media should try to educate people politically as well as culturally, encouraging a two-way communication model.

While this proposition is certainly beneficial in democratic and participatory terms and while some small community media might practice it, it is not clear either that big media conglomerates will follow suit or that audiences will change their media diets toward this kind of media outlets. To openly state ideological positions somewhat solves—or in other words, warns people about—the problem of intentional frames by making people aware of reporters’ ideological stance. However, since media
empires want to capture audiences from many ideological positions, it is not clear that they will follow this recommendation; though there is a small hope that the newer trends in audience segmentation and narrowcasting, especially in the web, could foster this idea. Still, propaganda and public relation agencies as well as interest groups would try to impose their frames to journalists, who would be influenced by these intentional frames even if they openly express their own position, and to audiences through advertisements and other media messages. These two propositions would help to mitigate a little bit, by making audiences aware of reporters’ and media outlets’ ideological positions, effects like agenda setting and framing. However, none of the solutions addresses the cognitive effects derived from the juxtaposition of media content, which is unavoidable since messages cannot appear in isolation.

If, as Lippmann (1922) proposes, expertise reduces individuals’ vulnerability to media fictions and if, as some research suggests, some media effects are less pronounced in individuals who are aware of them (Bargh & Chartrand, 2000), then, a possible solution to reduce all these media effects is to teach individuals media literacy, making it a core course in secondary and high school programs. While this idea sounds difficult to apply, it is more realistic and plausible than those that require media conglomerates to change or audiences to modify their media diets. At the same time, it is also more democratic than creating a group of experts to make unseen facts intelligible. Besides, media literate people would be more conscious and responsible about their participation in media and about their media consumption habits.

In the Public Sphere

Habermas’s (1991) public sphere presupposes that private individuals can leave their private characteristics and interests aside when discussing public matters, which makes them socially equal in public deliberations. The public sphere is a deliberation realm in which private individuals join together forming a rational public that subjects the political domain to public scrutiny (Habermas, 1991; 1964). Public opinion is the outcome of the rational consensus that takes place in the public sphere and it is the medium through which private individuals bring their ideas and claims to the state. According to Habermas, the separation of the public and the private is a requirement for the public sphere to work in optimal conditions. The disembodiment of individuals’ arguments is supposed to generate a rational consensus in the public debate.
For the same reasons that media objectivity cannot be attained—namely, people’s natural and intentional frames—objectivity in the public sphere is unrealistic and, for some critical thinkers, also undesirable (Fraser, 1995). Individuals’ cannot generate opinions separated from their personal frames, which include their identity, personal experiences, and acquired knowledge. Not only are individuals unable to separate their arguments from their private selves, but also they cannot separate other arguments from their bearers. That is why feminists oppose Habermas’s account of the public sphere claiming that ignoring—or trying to ignore—one’s gender, class, and race, when discussing public accounts, is in fact subjugating these to the dominant hegemonic position (Nerone, 1995; Fraser, 1995). It has been claimed that Habermas’s and liberals’ public debate separates individuals into citizens—if they are white-rich-males—and non-citizens—if they are children, female, or poor (Warner, 1992). In this way, separating the private from the public in the public sphere helps keep out from public attention apparently private issues—such as private property, race, or sex—perpetuating class, race, and gender oppressions.

Beyond individuals’ impossibility of disembodying their arguments, Habermas’s public sphere presupposes that private subjects try to advance the common good instead of their own private interests, when in fact groups as well as individuals try to push their interests into the public debate and the state’s agenda. Habermas’s public sphere is different from liberals’ marketplace, which is another kind of ‘public sphere’, since the latter is supposed to advance the common good only when individuals pursue their own interests and goals. This clearly does not correspond to some critical thinkers’ description of the marketplace, claiming that it “presumed the negation of the private in the sphere of the public” (Nerone, 1995, p. 71). On the contrary, while both spheres generate supposedly rational outcomes that foster the common good, Habermas’s public sphere requires individuals to leave aside their private agendas whereas the marketplace compels individuals to follow them. In this way, liberals’ notion of human is less romantic and more realistic than Habermas’s. Humans are always individualists; they are moved by their own interests whether in their private or public life, which—by the way—are always mixed. Even those who proclaim communities’ over individuals’ rights are, in the end, individualists; most individuals who join to a community do so since they would not be able to pursue their own interests and rights by themselves.

Not only having an objective public sphere is unrealistic, but, for some authors, it is also not desirable. A subjective public sphere accepts the existence of cultural, racial, gender, class, and identity

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differences among private individuals and promotes their co-existence. For Carey (1989), the clash of values in public deliberations enriches the public debate; thus, the public sphere should aim to be neither rational nor objective since expressing one’s ideology fosters pluralism as well as negotiations of meanings. As Fraser (1995) explains, individuals should participate as private selves to contribute from their own perspective in the generation, circulation, contestation, and reconstruction of social meanings. To achieve this, according to Fraser, is better to have a multiplicity of publics rather than one big public since the dominant always imposes its view over its subordinates and, the bigger the group, the more this domination is exacerbated. However, this view does not take into account that the smaller the group, the bigger is the social pressure on the individual.

Conclusion

Humans’ evaluations are not rational whether at the individual or at the aggregate level. The human cognitive system is vulnerable to media effects and its public outcomes are vulnerable to social influence. Similarly, individuals’ internal judgments are not objective since they cannot interpret reality if it is not through their cultural and personal lenses. Individuals’ externalized opinions are not objective either since they pursue their own agendas and, therefore, impose intentional frames in the public deliberation. In this way, public opinion is not the outcome of a rational consensus free from social pressure. On the contrary, public opinion is the result of individuals’ biased perceptions influenced by media frames and propaganda. This is not, however, the end of politics or democracy. Carey (1989) accuses Lippmann (1922) of redefining the problem of the media as an epistemological one rather than one rooted on morals and politics, depoliticizing ironically the public sphere. Contrary to Carey, knowing the weaknesses of our cognitive system in relation to media messages and social influence is a necessary step in trying to mitigate the effects of intentional frames and social pressure on individuals’ opinions, moving one step forward in our search for a participatory democracy.

Natural frames are part of our nature and cannot be avoided; they re-define the human from a rational to a symbolic animal that constructs reality through communication. Individuals, however, take advantage of this possibility of constructing reality to manipulate others’ picture of the world through the use of intentional frames to advance their own interests and goals. Once we know how the human and the system work, theories of communication should focus on real and small possibilities of changing the influence of these intentional frames and other non-intended effects like juxtaposition. Trying to
change capitalism or capitalists’ aims for profits, which generates a flood of leisure and advertisements on media messages as well as media conglomeration, is utopian if not almost impossible. Changing, however, how people see and understand media through media literacy, can make a big change on how individuals’ confront media messages –frames as well as contexts–; how they choose their diets –which might promote less leisure in media and more critical and controversial reporting–; and, how they involve themselves in the social construction of reality and in the public sphere by increasing their participation as producers of media messages, especially in our digital times which provide ordinary citizens the opportunity to publicize themselves and their own intentional frames.
CHAPTER IX

CONCLUSION:

THE WORLD OUTSIDE, NEWS MEDIA MESSAGES, THEIR JUXTAPOSITION, AND THE IMAGES IN OUR HEAD

Media not only affect the amount and kind of information that individuals get about events, but also how they cognitively represent them and the contextual stimuli with which they mentally compare them. Even when they have been overlooked in political communication research, news contexts, as proved in the present study, affect how individuals evaluate news events in terms of importance, interest, and their potential participation on them. Juxtaposition, hence, affects news perception and different contexts activate different mental representations that promote different interpretations and evaluations of news events. Context effects in news reception add evidence to the research finding that human evaluations are relative and vulnerable to media effects, since messages and their contexts affect the recency and frequency with which mental representations are activated.

In contrast to previous studies of juxtaposition in media messages, the present study is the first attempt to empirically measure the influence of news items on the perception and evaluation of adjacent news messages. Contrary to the criticism of the mixing of tragic and trivial content, it was found that trivial news stories promote a higher evaluation for the majority of tragic events, since it was the combination less prone to assimilation and most prone to contrast effects. Therefore, the context in which the tragic news had the lowest probability of being flatten or trivialized was—surprisingly—a trivial news story. Other contexts that might seem more appropriate or acceptable for the tragic news, such as serious or other tragic stories, fostered assimilation effects usually reducing its perceived importance, interest value, and individuals’ potential participation on the event. Though more studies are necessary to completely understand and discover the effects of complex saturated media environments on the interpretation and evaluation of news stories, the study’s experimental results give some hopes about the visual presentation of tragic events in trivial contexts. This finding is an optimistic outcome, since, news media—without knowing or caring about the effects of this juxtaposition—usually mix both content categories in news casts, online news, and entertainment programs. Nevertheless, results also show that
assimilation is –by far– the most common effect promoted by news juxtaposition, which seems to be the default response of the human cognitive system in evaluation processes.

**Contributions**

The present study contributes to different areas of research within communication and psychology. First, this study fills several gaps in political communication and priming and context effects research by highlighting the relevance of contexts in news reception, by testing common assumptions about the juxtaposition of tragic and trivial content, and by proposing a network model to understand the effects of priming due to news juxtaposition. In contrast to the main trend in media effects and political communication that focuses on the effects of the amount of media coverage about events and their frames, the present study emphasizes the importance of contexts in the perception and evaluation of news events. The role of contexts in the perception of stimuli had already been thoroughly investigated in cognitive and social psychology as well as in advertising research but it is scarce in communication theory, and news stories are not usually used as target stimuli in priming and context effects research. In this way, contexts, along with frames and agendas, are also theoretically relevant when discussing the role of media in the construction of public opinion and individuals’ political attitudes toward events. In addition, this study empirically tests previous hypotheses and commonly held intuitions regarding the juxtaposition of heterogeneous content; specifically, Berger’s (1982) and Postman’s (1985) criticisms against the mixing of tragic and trivial messages. This also fills a gap in the literature about media coverage of tragic events, which usually only pays attention to the selection criteria for their coverage and how they are framed. While further experiments should focus on individuals’ actual participation, the present study shows that individuals’ potential participation on tragic events can be positively or negatively affected by juxtaposition. Finally, this study contributes to the theoretical analysis of contextual priming effects through the development of a network model. This model introduces new ideas in the conceptualization and understanding of priming due to news juxtaposition, such as relevance and motivated-nodes, and provides mechanisms for assimilation and contrast to take place. While the model and its usability still have to be tested in further studies, it survived the present experiment and proved useful as a framework to understand some of its results.

Second, this study fills a gap in visual communication and journalism by providing a complete definition of juxtaposition and proposing three dimensions of the phenomenon (contrast, density, and
resemblance) useful for its systematic analysis and empirical testing. In addition, by using these dimensions, the present study tracks the evolution of the phenomenon from early newspapers to online news. This interpretation of historical data on the form of news shows that online news reverses a decreasing trend on news juxtaposition generating for individuals a challenging environment for processing news: News items have more potential spatial and temporal primes than ever, while contrast and resemblance have also reached very high levels. The effects of these complex media environments still have to be tested. The present study provides initial answers and postulates some hypotheses about them.

Limitations

The present study on the juxtaposition of news has several limitations. While it investigates spatial juxtaposition of news items, it does not test the effects of temporal juxtaposition in the perception and evaluation of news. Similarly, the present study simplifies the phenomenon by manipulating only contrast between two juxtaposed articles. However, since this is the first study on the influence of news stories on the evaluation of adjacent news articles, it made sense to start with the most basic stimuli and to increase its complexity and the number of variables in further studies. In addition, since it was an ecological experiment in which participants’ exposure to the stimuli was at their own pace and in natural settings, some measures such as reading time were not used in the experimental design. Finally, the experimental results were not useful for answering the role of emotional congruity in assimilation (H4), which will have to be addressed in further experiments.

Further studies

Further studies on the contextual priming effects due to news juxtaposition should continue its experimental research adding more variables such as resemblance, density, the appearance of images, and more content categories. This would allow testing how complex online news environments affect individuals’ reception, interpretation, and evaluation of news events.

Future studies should also focus on the discovering of mechanisms behind contrast effects. For instance, previous studies suggest that, when participants are aware of priming influences or of the emotional disruption between the contents juxtaposed—not to be confused with being aware of the experiment’s objectives or research questions—, they overcorrect their responses fostering a contrast
effect. Since previous studies usually discard these answers instead of analyzing them –confusing awareness about the study’s objectives with awareness of priming influences–, it is difficult to know the role of consciousness and awareness in the evaluation of juxtaposed messages. Other factors that might promote contrast effects, such as media literacy –as hypothesized in Chapter VIII– and reading in a second language, in which participants show less vulnerability to frames as recently proved in framing experiments (Keysar, Hayakawa, & Gyu An, 2012), should also be investigated.

The model should also be tested in further experiments, especially the viability of the concept of motivated-nodes. This could be tested by manipulating elements considered important for participants, such as comparing the effects of context in a story narrating a fictional tragic event from participants’ home country versus an identical news context with identical news stories but from another the country. In addition, the role of emotional congruity and applicability in assimilation effects still needs to be addressed in future experiments.

Finally, after investigating if frames or contexts affect more the evaluation of news events, further studies should start making experiments that join previously known media effects in the same experimental design. Usually, media effects studies focus in one kind of effect without knowing how it interacts with other effects. While the investigation of the interaction among media effects poses big challenges to researchers, it is a necessary step if we want to know how our complex media environment actually affects the images in our heads.
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APPENDIX A

HEADLINES OF THE NEWS STORIES USED AS EXPERIMENTAL MATERIAL

Tragic

At least 47 killed in school collapse in Haiti
Aid group: 400 dead in Eastern Congo massacres
More than 3 million face hunger in Ethiopia
A war without limits: Somalia's humanitarian catastrophe
Finland mourns 10 victims of school shooting
More than 60,000 people in Zimbabwe have been infected by cholera
Hundreds are feared dead in Philippines
Pakistan earthquake death toll likely to top 300
Millions of malnourished children left untreated
U.S. toll in Iraq reaches 4,000
Tanker explosion kills 100 in Kenya
Counting the bodies in the aftermath of clashes in Nigeria
Sri Lanka's civilian casualties reaching appalling levels
Death toll in Thai nightclub blaze rises to 64
US banking giant slashes jobs as crisis bites
Australia fire toll could exceed 200
Rain stops in Vietnam but flood toll rises to 92
Mexican drug cartel violence spills over, Alarming U.S.
25 bodies identified from plane crash in Spain
Dozens reported dead in India attacks

Serious

Talking rubbish
At least 14 dead in Montana crash
What thousands of milk teeth reveal about radiation
Boy Alfie Patten is father at 13
North Korean missile is challenge to Obama
Carmakers must do more to get more aid, Obama says
U.S. envoy: Don't expect warmer relations with Iran
Standoff with pirates shows U.S. power has limits
Rap star TI sentenced to prison
For Obama, Afghanistan tests
Vast spy system loots computers in 103 Countries
China says Pentagon report will hurt military ties
Mexico retaliates against American congressmen
No plans to scrap Cuba embargo
Obama may find Europe reticent on some U.S. goals
GOP must call Obama’s bluff on immigration
Colombian guerrillas to free hostages soon
Cost works against alternative energy sources
Obama team deploys campaign tactics to get point across
Scientists decode set of cancer genes

**Trivial**

The world's most stylish icons turns 50
Rihanna gets a gun tattoo
The good, the bad, the Britney
Cyrus: Another stuck-up diva in the making
Bruce Willis weds again!
How to get Michelle Obama's toned arms
Jonas brothers rule the Kids' Choice Awards
Johansson says she'd love to work with Burton
Love him or hate him: Landon Donovan
$3.7 million for her virginity
Public comments hurt Sox in negotiations
Phelps apologizes for marijuana use
A small guy worth $6.6 Million
Astronaut tests stink-free underwear
House Republicans present outline of alternative budget
Being the best of the west is not enough for the Lakers