RESEARCH ARTICLE

How communication mediums shape the message

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Abstract

Communication is an integral part of everyday life. Consumers chat with friends, search for information, and complain to customer service. Salespeople pitch products, employees answer questions, and market researchers ask them. But communication does not occur in a vacuum. Modalities (e.g., speaking or writing), channels (e.g., text, phone call, or email), and devices (e.g., smartphone or computer) are the *mediums* through which communicators communicate. While these mediums often seem incidental, might they impact what gets communicated? And if so, how? This paper offers a comprehensive framework for understanding how mediums shape the message. Specifically, we argue that modality, devices, and channels all shape communication through the same two key drivers: deliberation and audience salience. As a result, the mediums communicators use to communicate impact everything from the thoughtfulness and concreteness of communicated content to the degree to which it is self-enhancing or honest. This work sheds light on the psychology of content production, provides insight into the drivers and consequences of communication, and highlights how emerging technologies may shape communication in the future.

KEYWORDS
communication, linguistics, online consumer behavior, word-of-mouth and user created content

Communication is ubiquitous. Consumers talk about movies, search for information, and post opinions online. Salespeople pitch customers, retail employees answer questions, and customer service agents try to help consumers. Even online search requires communicating desired information to products like Google or Alexa.

Not surprisingly, then, communication has wide-ranging impact on consumer behavior. It shapes everything from attitudes and evaluations to choices and purchases (Babić Rosario et al., 2016; Herr et al., 1991; Moore & Lafreniere, 2020; Packard et al., 2018). Word of mouth, for example, increases product awareness (Van den Bulte & Wuyts, 2009), and positive reviews increase sales (Chevalier & Mayzlin, 2006). Similarly, small variations in search greatly impact consideration sets and choice (Bettman, 1979).

But while it is clear that communication is frequent and important, might the *way* people communicate shape what they share?

Modalities, devices, and channels are the mediums through which people communicate. Communication happens through a modality (e.g., voice or text), a channel (e.g., face-to-face or email), and often with the aid of a device (e.g., smartphone or computer). But while these mediums are vital for communicating, they have often been thought of as incidental: simply the vehicle through which communicators happen to deliver their message. Might these mediums shape what gets communicated in important ways? And if so, how?

This paper explores how mediums shape messages. Specifically, we develop a parsimonious perspective that illustrates how modality, channels, and devices influence communication, and that they do so through the same underlying processes.

The paper makes four main contributions. First, it integrates disparate research streams into a single, comprehensive framework. Individual papers in marketing, psychology, and other disciplines have begun to examine

how particular mediums impact communication. But while each paper has shed light on a specific piece of the puzzle, there has been less attention to how these pieces fit together. We develop an overarching conceptual framework (see Figure 1) that simultaneously explores modality, device, and channel while distinguishing the effects specific to each. This allows us to review and structure the modality literature while building a foundation for evolving mediums where less work has been done (i.e., devices and channels).

Second, it highlights the underlying processes behind these effects. While individual papers have shown the effects of a particular medium in a particular context, without knowing why these effects occur, it is hard to generalize (i.e., to new and broader contexts). We demonstrate that, rather than influencing communication through completely distinct paths, modalities, devices, and channels all shape communication through the same two key drivers: deliberation and audience salience. The production processes and learned associations specific to each medium affect these drivers, which, in turn, shape the content produced.

Third, by delineating the underlying processes, the framework generates new hypotheses and areas for future research. Similarities between the drivers behind mediums suggest that findings involving one medium (e.g., speech) may also hold for another (e.g., smartphones). Smartphones and speech have similar effects on deliberation and audience salience, for example, so if speaking (rather than writing) encourages certain types of content, smartphones (compared to PCs) may have similar effects.

Fourth, the framework provides insight into how novel devices and channels may impact communication in the future. The rise of smartphones and video chat have created new ways to communicate, but they also raise important questions about the nature of communication itself. By distilling the effects of modality, device, and channel down to how they enable deliberation, and increase audience salience, we shed light on how novel channels (e.g., live streaming), channel features (e.g., disappearing text), and devices (e.g., virtual reality headsets) may shape communication in the years to come.

Importantly, as with any complex and multifaceted phenomenon, choices regarding scope must be made. This paper focuses on how communication mediums impact the content communicators produce. While other factors (e.g., individual differences, communicator motivations, and the communication audience) may also shape communicated content, note that their effects are not driven by the *act* of communication itself, and certainly not by the mediums used. Communicators may tailor messages to match their audience (Baumeister & Hutton, 1987), for example, but the mediums they communicate through will still affect what they communicate. Similarly, communicators may choose particular mediums to achieve particular goals, but beyond medium *selection*, the mere act of communicating *through* a medium also shapes what is communicated. Someone having a tough day may call (rather than text) their spouse to hear their comforting voice, but the very fact that they are talking on the phone (rather than texting), will affect what is said (and potentially the warmth of the interaction). Indeed, experimental evidence demonstrates that even holding communicator goals and audiences constant, modalities and devices still shape communication (Berger & Iyengar, 2013; Melumad et al., 2019; Shen & Sengupta, 2018).

Consequently, while these other aspects clearly matter, we focus on the effects of mediums because they have received less attention. While communicators are often aware of how their goals or audiences shape what they
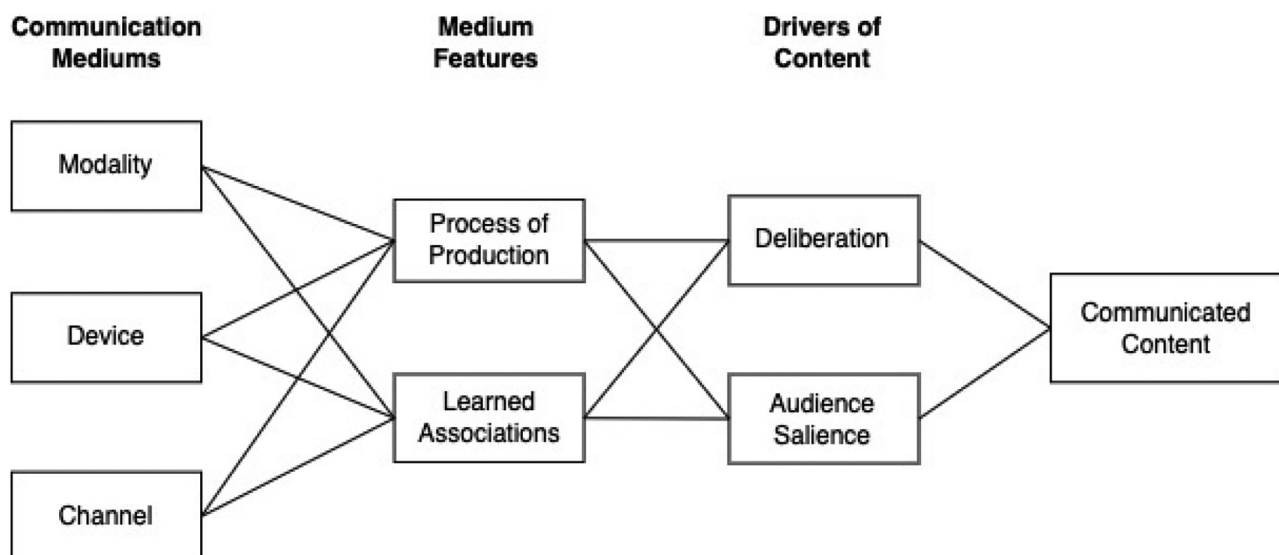

FIGURE 1 How mediums impact communication.

communicate, they are less aware of how the medium might shape the message. We suggest that mediums deserve more attention and discuss other communication aspects in the General Discussion.

Finally, similar to experimental work that manipulates mediums and observes their effects (e.g., Berger et al., 2021; Melumad et al., 2019), we explore the effect of a given medium (e.g., speech) holding other mediums (i.e., channel and device) and communication factors (e.g., audience) constant. This allows us to isolate each medium's effects. While mediums may also sometimes interact with other factors, they still have important main effects, and thus we explore potential interactions in the General Discussion.

To develop these contributions, we start by discussing communication mediums, and the key drivers of their effects (i.e., deliberation and audience salience). Then, we explore how modality, device, and channel each influence these drivers through the process of producing content and learned associations specific to each medium. For each category of mediums, we highlight our framework's implications, demonstrating how it sheds light on important, salient areas of consumer behavior. We close with a discussion of how the framework explains novel effects of emerging technologies and suggests directions for future research.

MEDIUMS AND MESSAGES

Modalities, devices, and channels are the mediums through which people communicate. Communication modalities are methods of producing content. Speaking and writing are the most common, but others (e.g., sign language) also exist. Communication devices are additional equipment through which content can be produced and shared. Smartphones and personal computers are common devices, but novel devices (e.g., smartwatches) are always emerging. Communication channels are the vehicles through which content is delivered to audiences. Phone calls, texts, emails, social media, and face-to-face conversations are all common examples. People communicate via a modality, through a channel, and sometimes with the aid of a device.

Note that while certain mediums often co-occur (e.g., phone calls always involve speaking and emails typically involve writing), modality, channel, and device are ultimately independent. Speaking, for example, happens in many contexts beyond phone calls, and while one can write emails, they can also be dictated. Consequently, each category of mediums is distinct.

AN INTEGRATIVE FRAMEWORK

Individual papers in different disciplines have begun to explore how mediums might shape communication.

Work on modality, for example, suggests that its effects are driven by the *speed of content production* (e.g., Akinnaso, 1982), the *editability* of content (e.g., Rubin, 1987), or *automatic associations* formed between modalities and communication audiences (e.g., Shen & Sengupta, 2018). Similarly, work on communication devices suggests their effects are driven by the *effort* required to produce content (e.g., Melumad et al., 2019), device *portability* (e.g., Ransbotham et al., 2019), and the *association* between devices and social interactions (e.g., Melumad & Meyer, 2020). Finally, work on communication channels suggests that differences in *social presence* shape communication (e.g., Duthler, 2006), and work suggesting that *synchronicity* (e.g., Berger & Iyengar, 2013) and *ephemerality* (e.g., Jahandarie, 1999) drive modality's effects may actually be discussing differences in channels.

While this list of constructs is large, we suggest that the varying effects can be simplified into two overarching constructs: deliberation and audience salience. Specifically, we posit that differences between communication mediums in the speed of content production, editability of content, effort required to produce content, portability, synchronicity, and ephemerality all ultimately change a communicator's propensity to deliberate while creating content. This deliberation, in turn, changes what they communicate.

Similarly, we suggest that differences between mediums in automatic associations with communication audiences, social presence, and synchronicity all ultimately change the extent to which a communication audience is salient to a communicator while they produce content. This salience, in turn, changes the content of communication.

Deliberation

Deliberation is the extent to which communicators thoughtfully consider what to say and how to say it (Chafe & Danielewicz, 1987; Walther, 2011; see Berger & Iyengar, 2013 for a review). When mediums encourage or enable communicators to think, they increase the propensity to deliberate. Deliberation can allow communicators to consider alternate wordings, different topics, or even prior communications. Modality, devices, and channels all affect how much communicators think about their message, before, while, and after it is produced.

As detailed below, we suggest that deliberation can shape communication in various ways. Increased deliberation should shift communicators from "hot", intuitive, affective reasoning to more "cool", rational, and cognitive reasoning (Kahneman, 2011). This may decrease the emotionality of not just the content produced (Berger et al., 2021) but also of the thinking process that produced it. Deliberation should also encourage clearer

and more organized content, allow communicators to be more analytical, and facilitate the recall and transmission of more specific details (e.g., discussing how a product works in online reviews).

Audience salience

Audience salience is the degree to which communicators are aware of, and focused on, their audience (Chafe, 1982; Fondacaro & Higgins, 1985; Jahandarie, 1999; Shen & Sengupta, 2018). When communication mediums highlight, or provide more information about the communication audience, they increase audience salience. This makes communicators more aware of how what they share might impact their audience and thus increases the motivation to use language that is appropriate for, and relevant to, that audience. Modalities, channels, and devices can all hide or highlight the audience on the other side of a message.

As detailed below, we suggest that audience salience shapes communication in various ways. While all communication is both an information exchange and interpersonal interaction, audience salience should emphasize the latter. As a result, heightened audience salience should encourage communication that is more tailored to the audience, highlights actors, and prizes the here and now. Audience salience can also encourage consumers to forge connections between themselves and the content produced, raising topics that connect brands to their own lives (Shen & Sengupta, 2018) or providing details about how a product makes them feel.

The importance of deliberation and audience salience

We focus on deliberation and audience salience for several reasons. First, prior work hints at these two processes, albeit under different names and constructs. Many researchers, for example, have theorized that mediums might change the extent to which individuals think (i.e., deliberate) while they produce language. Akinnaso (1982), for example, argues that writing is a "conscious analytical process" (p. 112) and that speaking does not allow "time to integrate a succession of ideas into a single linguistic whole" (p. 113). Similarly, Melumad, et al. (2019, p. 260) posit that the "cognitive effort required for using [smartphones]" changes how consumers communicate, and Rettie (2009) noted that text messages' "asynchrony provides thinking time, enabling interactants to choose their words carefully" (p. 1143). We argue that these, and similar examples discussed below, boil down to changing the opportunity (e.g., time) and capacity (e.g., mental bandwidth) communicators have to deliberate as they produce language.

Prior literature contains similar hints about audience salience. Shen and Sengupta (2018, p. 596), for example,

suggest that "speakers… are more focused on the interaction with the audience…while writers are more focused on the information to be conveyed" (see Rubin, 1987; and Akinnaso, 1982 for similar points). Similarly, Melumad and Meyer (2020, p. 30) suggest that there is an automatic association between smartphones and social connection because "while PCs tend to be used for more work purposes, smartphones are often relied on for texting with friends and family." And Skierkowski and Wood (2012) suggest a strong association between texting and interpersonal interaction because text messaging is involved in relationship maintenance. We argue that these, and similar examples discussed below, are all ultimately about communication mediums changing the salience of the communication audience.

Further illustrating the centrality of these concepts, a review of papers examining the effects of communication mediums published in JCR, JMR, JCP, JM, and Marketing Science in the past 50 years (see Table 1) finds that deliberation and audience salience (or an ostensibly identical construct) are highlighted as explanations for the proposed or observed effects.

Second, deliberation and audience salience also make sense from a theoretical perspective. Behavior is often described as a combination of motivation and ability (MacInnis & Jaworski, 1989; Vroom, 1964). For a behavior to occur, an individual must have the motivation to initiate it and the ability to complete it. In this case, audience salience provides motivation to produce different styles of language. In communication contexts where audiences are more salient (e.g., face-to-face conversations vs. text messages), for example, someone talking with an acquaintance should be more motivated to try to impress them by producing self-enhancing content (because they are more aware of and focused on the person they are interacting with).

Even if there is motivation, though, communicators must have the ability to produce different styles of language, and that is where deliberation comes in. Someone may try to impress an acquaintance, but unless they have the time to think about what to say, it will be hard to do so effectively. Mediums that allow for more deliberation (e.g., emailing vs. live chat) enable communicators to create self-enhancing content (e.g., larger words or flattering topics).

To begin to explore the roles of deliberation and audience salience, we first examine how one medium (i.e., modality) shapes these factors, and thus communication.

HOW MODALITY SHAPES COMMUNICATION

Speaking and writing are the most common modalities. Speaking (e.g., face-to-face, over video conferences, and through dictation to virtual assistants) involves producing words through voice. Writing (e.g., emails,

TABLE 1 Marketing papers studying the effects of communication mediums.

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Deliberation	
Berger and Iyengar (2013)	Written (compared to oral) communication gives consumers more time to construct and refine what to say. We suggest that this increases deliberation
Berger et al. (2021)	Compared to speaking, writing increases deliberation
Melumad and Meyer (2020)	Smartphones (compared to PCs) require more effort to generate content. We suggest that this reduces bandwidth for deliberation
Ransbotham et al. (2019)	Mobile word of mouth (compared to PCs) is created on the go. We suggest that this reduces the propensity to deliberate while communicating
Melumad et al. (2019)	Communicating on smartphones (compared to PCs) is more physically constraining. We suggest that this reduces the ease of deliberating while creating communication
Melzner et al. (2022)	Oral (compared to manual) information disclosure increases synchronicity and reduces processing resources. We suggest this reduces both the time and capacity for deliberation
Audience salience	
Shen and Sengupta (2018)	Speaking about a brand, rather than writing about it, leads to a greater focus on social interaction. We suggest that this increases audience salience
Melumad and Meyer (2020)	Smartphones (compared to PCs) are more frequently used for interpersonal communication. We suggest that this increases audience salience
Melzner et al. (2022)	Oral (compared to manual) information disclosure makes the presence of other social actors more salient
Melumad (2023)	Speaking (compared to writing) increases audience salience
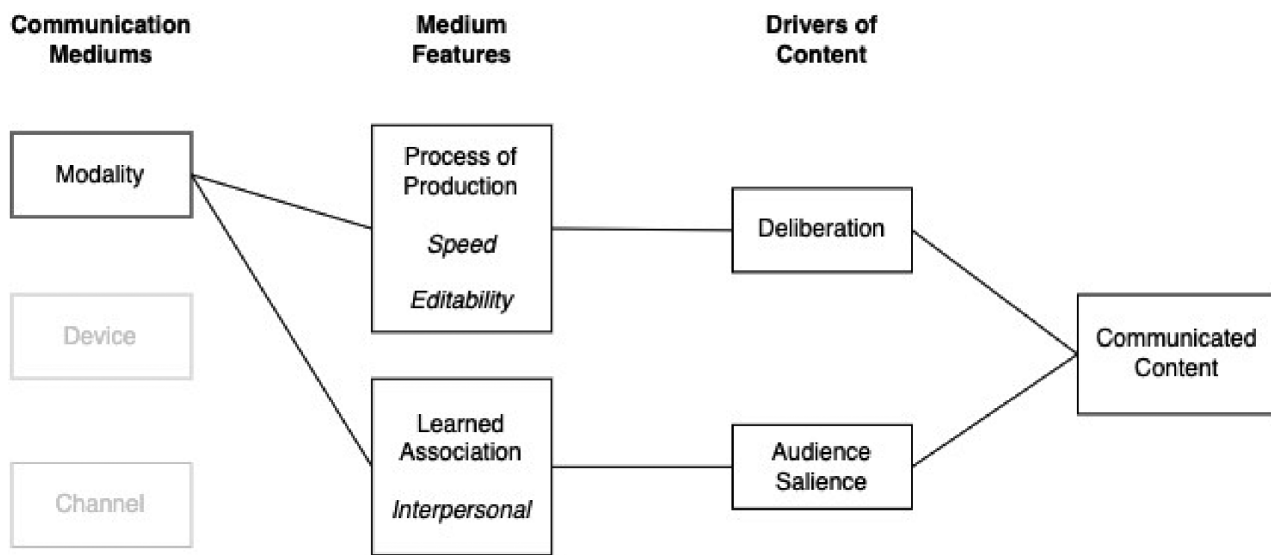
FIGURE 2 How modality impacts communication.

text messages, and comments on social media), in contrast, is text-based. Speech has been characterized as more personal, social, self-disclosing, and informal (Akinnaso, 1982; Chafe & Tannen, 1987; DeVito, 1996; Rubin, 1987) while writing has been characterized as more formal, detached, and complex (Akinnaso, 1982; Biber, 1986; Chafe & Tannen, 1987; Horowitz & Newman, 1964; Rubin, 1987). Speaking tends to produce more emotional language, for example, which can increase persuasion (Berger et al., 2021).

Understanding modality's impact, however, requires disentangling its effects from other aspects of communication. For example, while some have suggested that speech is more synchronous than writing (Akinnaso, 1982; Berger & Iyengar, 2013), some ways of speaking (e.g., voicemail) are less synchronous than some ways of writing (e.g., instant messenger). These examples reveal that, rather than being driven by modality, synchronicity actually depends on communication channels. Truly understanding modality's effects thus requires understanding how it affects deliberation and audience salience, which requires examining the processes of production and the learned associations specific to each modality (Figure 2).

How modality shapes communication: changing deliberation

We suggest that communicating through different modalities should shape communication by affecting communicators' propensity to deliberate. This should be driven by (1) the speed at which content is produced and (2) the editability of that content.

Process of production—speed

It takes longer to write something than speak it (Akinnaso, 1982; Fondacaro & Higgins, 1985), which gives writers more time to deliberate as they communicate. While some of that time is used in the act of writing (e.g., identifying and pressing the right keys on a keyboard), the additional time can also be used to think about what to say. Speakers, in contrast, often communicate nearly as fast as they can think (Jahandarie, 1999; Linell, 1998) and so have less time to deliberate. Speakers also often monitor things like pitch and volume (Walther, 1996), which also reduces their capacity to deliberate while producing linguistic content.

Process of production—editability

When communicators write, they produce language that exists on a page or a screen and can be edited as it is produced. When communicators speak, however, they produce sound waves that cannot be easily edited. This difference in editability makes deliberation difficult because even when speakers have time to plan before (or while) producing content, they can only hold so much in memory (Horowitz & Newman, 1964; Melzner et al., 2022).

The fact that speaking cannot be edited also makes communication difficult to revise. Revision is impossible in most spoken communication channels, but even when channel features (e.g., the asynchrony of a recorded message) allow for revision, it is not at the fine-grained level possible with writing (e.g., deleting a repeated word or changing the location of a sentence). Voicemails can be reviewed before sending, for example, but it is impossible to edit individual parts. The whole message must be deleted and re-recorded.

Writing, however, can be revised before sharing. Writers can easily replace words, edit structure, and even alter message tone before transmission (Akinnaso, 1982; Rubin, 1987). While someone might reuse the word "amazing" multiple times while speaking continuously in a voicemail, for example, sending an email allows them to swap in a synonym, reducing repetition.

Overall, then, even when speakers have the *time* to deliberate, they are still limited in their *capacity* to do so.

This is because spoken content is produced faster and is more difficult to edit.

How modality shapes communication: changing audience salience

Modalities also impact audience salience. We suggest that modalities' differing associations should impact communication by changing how much communicators consider their audience (consciously or not). This should be driven by differences in the extent to which different modalities are associated with interpersonal interaction.

Learned association—interpersonal

Speech tends to be more social (Akinnaso, 1982; Melumad, 2023). While people often write to themselves (e.g., shopping lists), speech typically involves others (Olson, 1977; Rubin, 1987; Schallert et al., 1977). Consequently, speaking can put communicators in an interactive mindset where they are more aware of, and focused on, their audience. In fact, the association between speaking and audiences is so strong that even speaking to virtual assistants (where no human is present) leads consumers to imagine an audience (and their potential reaction) and alter their search queries as a result (Melumad, 2023).

This is not to suggest that writing cannot involve salient audiences. A large family group chat on WhatsApp, for example, is likely a salient audience. In these situations, however, it is important to consider whether writing, itself, is making the audience salient, or if it is some other feature of the communication context (i.e., the communication channel or audience). In the case of a large family WhatsApp chat, for example, the audience is certainly salient, but given the same audience, communication topic, and channel, speaking (e.g., through voice notes) should still increase audience salience compared to writing. The same logic applies to modalities like sign language. Compared to writing, for example, signing's faster production speed, ephemerality, and predominant use in interpersonal contexts creates effects on deliberation and audience salience that shape what and how signers communicate.

Implications and connections

Our framework has important implications for consumer behavior. To illustrate this, this section discusses how modalities influence the buyer decision process. Later sections discuss how devices influence word of mouth, and channels influence interpersonal persuasion, all through deliberation and audience salience. These specific contexts were chosen because they are

central consumer research topics, but they are merely examples. Each category of mediums (modalities, devices, *and* channels) affects all three, as well as many other consumer contexts.

In their foundational consumer theory, Engel et al. (1978) explain the stages that comprise the buyer decision process: problem recognition, information search, and alternative evaluation. By influencing deliberation and audience salience, modality can affect consumer behavior through each stage.

Problem recognition

Consumers often discover unmet needs in conversations. Complaining about losing their keys, for example, can encourage someone to explore potential solutions.

By influencing deliberation and audience salience, speaking and writing can change the extent to which consumers perceive needs, how they define them, and how they communicate these needs to themselves and others. Heightened audience salience, for example, should lead speakers to produce language that is more personal and engaging. Speech, compared to writing, leads to more self-focused content, including more first-person pronouns (Biber, 1986) and first-hand experiences (Shen & Sengupta, 2018). Speakers also tend to use more active voice (Chafe & Tannen, 1987; Kroll, 1977), a structure that prioritizes conversational agents and seizes audience attention (Warren et al., 2021). Consequently, while writing might lead someone to say something like "These keys are so small, it's easy to lose track of them," speaking might lead them to say something more self-focused, active, and audience engaging instead (e.g., "I'm so scatterbrained, I can never keep track of my keys"). This difference in problem definition should impact what consumers search for as solutions (e.g., strategies for better organization vs. a larger keyring). Similarly, the increased propensity to deliberate while writing also tends to mute emotionality (Berger et al., 2021). This may make consumers more likely to recognize practical, utilitarian needs (e.g., something to help keep their home clean) when writing and hedonic, affective needs (e.g., a fun decoration to liven up the space) when speaking.

Information search

Consumers can search for information via writing (e.g., in a search bar) or speaking (e.g., to a virtual assistant) and this can shape what they search for, and the results they receive. Speaking's increased audience salience, for example, can activate self-presentational concerns, making consumers more likely to search for interesting products (or attributes) and less likely to search for embarrassing things. While someone may have no problem searching for "anti-dandruff shampoo" when writing,

for example, speaking might lead them to search for something more flattering like "shampoo that gives my hair the best volume." Such differences change both the information-gathering process and how consumers evaluate alternatives.

Writing, however, increases opportunity and capacity for deliberation, which allows consumers to think through, edit, and refine search queries. While speakers tend to rely on what is top of mind (Berger & Iyengar, 2013), writers have more time to consider more relevant information. As a result, writing may lead to longer and more analytical search processes. Consistent with the notion that these types of effects are driven by deliberation, consumers generate more analytical content when writing because writing provides more time to construct and refine what to say (Berger et al., 2021).

Evaluation of alternatives

Consumers often talk to others as they evaluate choice options. These conversations can be as simple as trying to figure out where to go for lunch, or as complicated as the trade-offs between renting and buying a home. The modality these conversations happen through can affect what gets said, and how consumers ultimately evaluate alternatives in their consideration set.

By increasing propensity to deliberate, writing should produce more well-reasoned, structured, organized, and thoughtful content. Indeed, compared to speaking, writing tends to create more complex, elaborate, and integrated structures (Biber, 1986; Chafe, 1982; Gumperz et al., 1984) and more formal organization like topic sentences and supporting evidence (Akinnaso, 1982). This more analytical approach can lead consumers to use more effortful cognitive "system 2" processing (Kahneman, 2011), changing the attributes they find appealing and arguments they find convincing (Cacioppo & Petty, 1984).

The editability and slower production speed writing offers also make it easier to consider multiple decision criteria. This may lead to more optimizing and less satisficing (Simon, 1956), which has important implications for how alternatives are evaluated and how purchases are made.

Generalizing to other mediums

This section explored how, through influencing deliberation and audience salience, communication modalities shape the language consumers use to navigate purchases. But given communication devices (e.g., smartphones) and channels (e.g., texting) impact the same drivers, they should have similar effects. By impacting propensity to deliberate and audience salience, for example, communicating via live chat (compared to email) or smartphone

(compared to PC) should influence the problems consumers perceive, the information they search for, and the evaluation of alternatives. The more a medium, be it modality, device, or channel, enables deliberation, the more likely consumers are to perceive utilitarian rather than hedonic needs while communicating. Similarly, the more a medium increases audience salience, the more likely consumers are to engage in an information search process that minimizes embarrassment. This interplay between communication mediums and the buyer decision process raises various interesting questions for future research (Table 2).

HOW DEVICES SHAPE COMMUNICATION

Devices should also impact communication. Devices (e.g., smartphones, computers, tablets, smartwatches, and even pens) are additional equipment through which messages are created or transmitted. Devices often act as a bridge, connecting the production modality selected by a communicator (e.g., writing) to the channel where the message will ultimately be transmitted to the audience (e.g., email). Written communication always requires a

TABLE 2 Examples of future research questions.

1. Do communication mediums change if consumers recognize a problem or need?
2. Do communication mediums change how consumer needs are defined?
3. Might communication mediums change how easy different stages of the customer journey are?
4. Might communication mediums affect how much time consumers spend in each stage, and the speed at which they move through the process as a whole?
5. Might certain mediums lead to better decisions, or greater satisfaction with them?

device, and while spoken communication often involves devices (e.g., a phone), it can be produced without one (e.g., face-to-face conversations).

Early work focused on computers (e.g., Sproull & Kiesler, 1991; Walther, 1996) and more recent work has focused on smartphones (contrasting them with PCs). Content produced on smartphones tends to be shorter, less focused on specific details, more emotional, and more self-disclosing (Melumad et al., 2019; Melumad & Meyer, 2020), while content generated on PCs tends to be more abstract, extreme, and reflective (Ransbotham et al., 2019).

Much like modality, though, we argue that understanding how devices shape communication requires understanding how their process of content production, and their learned associations, impact deliberation and audience salience (Figure 3).

How devices shape communication: changing deliberation

We suggest that communicating through different devices should impact content by changing communicators' propensity to deliberate. This should be driven by (1) changing the effort required to communicate and (2) enabling portable communication.

Process of production—effort

One factor that should shape deliberation is the effort required to use a device. Smartphones' smaller screens and buttons, for example, tend to make writing more physically and cognitively difficult than using PCs (Antoun et al., 2017; Raptis et al., 2005). The same holds for speaking (albeit potentially to a smaller degree). Smartphones
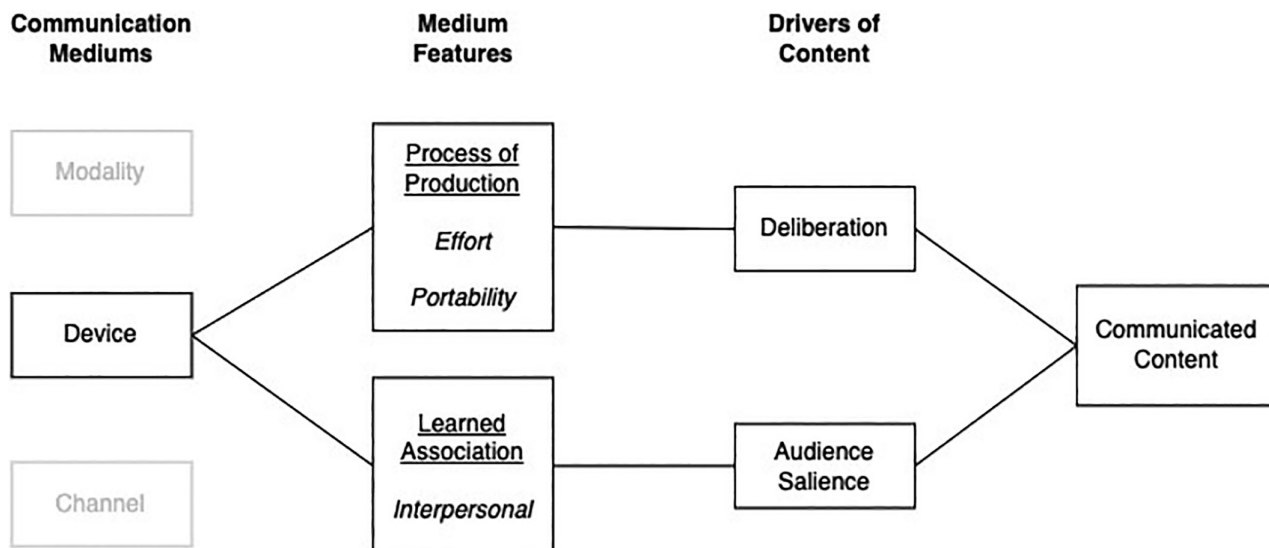

FIGURE 3 How devices impact communication.

often must be held while communicating, and tend to have inferior speakers and microphones, both of which should increase the effort required to communicate using this device.

These aspects, in turn, should reduce available bandwidth for deliberation (similar to cognitive load, Sweller, 1988). Much like how speakers (compared to writers) must direct mental effort to managing pitch, speed, and tone (Walther, 1996), the increased attentional focus required to communicate on smartphones (Melumad & Meyer, 2020) reduces capacity for deliberation. Consistent with this notion, compared to PCs, smartphone users tend to produce shorter, less detailed, content (Melumad et al., 2019; Ransbotham et al., 2019).

Process of production—portability

Device portability should also impact deliberation. Smartphones are much more portable than PCs and portability decreases the time between experience and communication. A restaurant goer can immediately write a review if they have their smartphone on hand, for example, but have to wait longer to use their PC. Portability also leads devices to be used in more distracting contexts. Smartphones, for example, are often used while in transit or in brief moments between tasks, while PCs tend to be used when people are more focused. These factors should reduce the propensity to deliberate because they reduce the time and bandwidth alloted to communication. Consistent with this notion, smartphones tend to encourage communicating topics that are top of mind (Melumad & Meyer, 2020), rather than those that require deliberation. Lastly, while existing research has focused on smartphones and PCs, the logic extends to other devices. Smartwatches, for example, are more portable than smartphones, have smaller screens, and make communication more effortful—all of which should reduce the propensity to deliberate (the opposite is true for tablets).

How devices shape communication: changing audience salience

Beyond differences in deliberation, we suggest that differing associations with different devices (e.g., social or interactive) should impact communication by changing how much communicators focus on their audience while producing content.

Learned association—interpersonal

Similar to modality, different devices have different associations. While PCs tend to be used for more individual and work-oriented tasks (e.g., word processing and spreadsheets, Bröhl et al., 2018), for example, smartphones are often used to connect with others and maintain social identities. Consequently, they are imbued with social associations (Melumad & Pham, 2020; Okazaki, 2009; Skierkowski & Wood, 2012).

These associations, in turn, should shape communication. Much like how speaking leads communicators to focus more on audiences than writing, devices' social associations should make audiences more salient and heighten focus on interpersonal aspects of communication.

Implications and connections

Our suggestion that communication devices shape propensity to deliberate and audience salience has important implications for understanding what gets communicated. In the context of word of mouth, for example, research suggests that social sharing serves five key functions: emotion regulation, information acquisition, impression management, social bonding, and persuading others (see Berger, 2014 for a review). By changing propensity to deliberate and audience salience, different devices should affect what people share through these five functions.

Emotion regulation

One reason consumers share word of mouth is to manage emotions (i.e., decrease negative emotions and increase positive ones, Berger, 2014). Consumers may want to relive positive experiences, for example, and sharing those experiences with others gives them that opportunity (Rimé, 2009). By shaping what gets communicated, our framework suggests that devices should impact consumers' ability to relive such experiences. By reducing the propensity to deliberate, for example, smartphones may lead communicators to focus more on the gist of experiences rather than specific details (Melumad et al., 2019). Rather than saying that "the pie crust was so buttery and flaky" when writing on a PC, for example, writing on a smartphone might lead to something briefer and more general like "dessert was amazing." While the content still suggests dessert was good, the lack of specific detail may make it harder for consumers to fully reimagine and relive what occurred, diminishing the ability to re-experience that positive memory.

Interestingly, one might wonder how this suggestion squares with the notion that smartphones also make content more emotional (Melumad et al., 2019). That said, there is a difference between emotionality, and the ability to relive an experience. Saying "dessert was amazing," for example, is emotional, but does not provide enough concrete detail to help consumers deeply relive what occurred (beyond remembering a positive evaluation).

Information acquisition

Consumers also generate word of mouth to gather information (Berger, 2014; Dichter, 1966). Our framework suggests that word of mouth generated through devices that increase the propensity to deliberate (e.g., PCs) should better facilitate information acquisition. Compared to mobile reviews, for example, PC reviews are longer, more complex, and more reflective of insightful thinking (Ransbotham et al., 2019). This, in turn, should impact the likelihood that content produced on these devices leads useful information to be acquired. While someone communicating on a smartphone might say something like "The camera on my phone sucks, do you know of any better options?" someone communicating on a PC may be more likely to say something longer and more complex like "I'm not satisfied with my phone. The camera takes blurry photos at night. Do you know of any better options?" Such more detailed questions should be more likely to receive detailed and insightful responses (e.g., "The new Google Pixel phone has Night Sight, specifically designed to take better photos in the dark"), allowing consumers to more effectively acquire information to navigate complex decisions.

Impression management

Consumers also share word of mouth to manage impressions (Berger, 2014; Chung & Darke, 2006). Much like speaking, our framework suggests that devices associated with interpersonal communication (e.g., smartphones) should increase audience salience and, as a result, encourage content that makes communicators look good. When creating restaurant reviews on a mobile device, for example, customers may be more likely to talk about the cost if it was fancy, but not if it was cheap. This shift in consumer language thus changes not only what the writer focuses on, but also the information audiences have access to as well.

Social bonding

Word of mouth is also driven by the desire to forge and maintain social bonds (Berger, 2014; Rimé, 2009). Such sharing privileges common ground, reinforces shared views (Ritson & Elliott, 1999), and reduces loneliness (Lakin et al., 2008). Our framework suggests that communication devices should impact the degree to which communication fulfills this goal. In particular, the greater audience salience associated with smartphones should lead content produced on them to be more relevant to the communication audience (i.e., approachable, tangible, and focused on the here and now). Consistent

with this notion, word of mouth shared through mobile devices tends to be more informal, more concrete, and less focused on the past (Ransbotham et al., 2019). This shift should lead word of mouth produced on smartphones to better facilitate social bonding and to create more common ground.

Persuading others

The device consumers communicate through should also shape word of mouth's persuasive impact. That said, which devices generate impactful content should depend on the consumption context. Expressing emotion in product reviews is beneficial for hedonic products, for example, but detrimental for utilitarian ones (Rocklage & Fazio, 2020). This suggests that in utilitarian contexts, where quality is objective and products are vertically differentiated, the well-reasoned, analytical language devices like PCs encourage should lead to more impactful reviews. In more hedonic contexts, however, where quality is subjective, and preferences are taste-based, the affective language devices like smartphones encourage may be more impactful.

Devices should also impact whether communicators themselves are persuaded by the content they produce. Research finds that analytical and explanatory language (that reasons about how and why experiences were liked or disliked) increases reviewers' evaluations of positive utilitarian experiences but dampens evaluations of hedonic ones (Moore, 2012). A PC's tendency to increase deliberation should encourage this type of language. Consequently, while writing a positive review on a PC should leave a consumer even more convinced about the efficacy of a utilitarian product (e.g., blender), it may leave them less enthralled about a hedonic one (e.g., movie).

Generalizing to other mediums

This section focused on how, by influencing deliberation and audience salience, devices shape word of mouth. Similar effects should extend to other mediums (i.e., modality and channel) that influence these same drivers. By impacting deliberation and audience salience, for example, speaking (rather than writing) and texting (compared to emailing) should impact what consumers share and its consequences. Any medium that increases audience salience is likely to increase impression management motives while mediums that increase deliberation are likely to improve the outcomes of word of mouth generated to acquire information. More generally, this discussion raises a number of interesting research questions for future research (Table 3).

TABLE 3 Examples of future research questions.

1. Does the medium that word of mouth is communicated through change which motives are more impactful in driving word of mouth?
2. Does the medium that word of mouth is communicated through change word of mouth's ability to satisfy different motives (e.g., collect information or connect with others)?
3. Does the medium that word of mouth is communicated through change how consumers reflect on and remember their own consumption experiences?
4. How might particular device features shape communication? Screen size, for example, or input format (e.g., keyboard vs. stylus)?
5. How might channels impact the persuasiveness of word of mouth? Might this be moderated by domain (e.g., utilitarian vs. hedonic) or purchase context (high vs. low involvement)?

HOW CHANNELS SHAPE COMMUNICATION

Beyond modality and devices, communication channels should also impact the content produced. Communication channels (e.g., text message, phone call, and face-to-face) are mediums through which content is sent to an audience. Some channels are linked to certain modalities (e.g., phone calls require speaking), while others span modalities and devices (e.g., one can voice-to-text or write text messages, from either a smartphone or a PC). While we often think of broad categories like email or social media, it is important to remember that individual social platforms (e.g., Facebook or Snapchat), email clients (e.g., Outlook vs. Gmail), and messaging platforms (iMessage vs. SMS) also represent unique channels because of the different features and associations specific to each.[1] As with the other mediums, we suggest that understanding a channel's impact on content requires examining the underlying processes of production and learned associations involved (Figure 4).

How channels shape communication: changing propensity to deliberate

Different communication channels should affect the extent to which communicators are able and encouraged to deliberate. We suggest that this is driven by both the process of producing content in different channels and the learned associations connected to each. Specifically, producing content through channels where (1) user interfaces make communication more effortful, (2) communication is more synchronous, or

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[1]Moreover, within a given channel there can be different sub channels, each with their own unique features. While Instagram stories disappear after 24h, for example, Instagram posts and comments are permanent unless deleted. Similarly, Facebook messenger is a live-chat platform that increases synchronicity while posting to someone's wall is much less synchronous. These differences in ephemerality and synchronicity should affect the content produced in each of these subchannels.

(3) produced content is ephemeral should all decrease propensity to deliberate. Channels that are (4) associated with producing formal, thoughtful content should increase deliberation.

Process of production—user interface

Different communication channels have different interfaces, which influence the ease of content production. Much like mobile devices versus PCs, channels that restrict communication to smaller input boxes (e.g., text messages versus email) limit the ease with which communicators can think about and review their content as they communicate. Similarly, channels, where communicators must exert (even minimal) effort while communicating (e.g., continually pressing the "record" button to record voice notes), should also decrease the bandwidth available (like how speakers monitor their tone and volume while speaking). In contrast, features like subject lines in emails should encourage communicators to stop and deliberate on the topic and purpose of their communication.

Process of production—synchronicity

Channels also vary in synchronicity. When speaking face-to-face, for example, or through live chat, the gaps between conversational turns tend to be relatively short. One person says something, and another responds immediately. In other channels (e.g., email or voice notes), however, responses are not expected immediately and often occur minutes, hours, or even days later (Kelly & Keaten, 2007). This difference in synchronicity, in turn, allows communicators more time to formulate communication before sharing (Chan, 2011). If someone is asked a question in face-to-face communication, for example, they tend to want to respond quickly so the silence does not become uncomfortable (Blass & Siegman, 1975; Horowitz & Newman, 1964; Stivers et al., 2009). Less synchronous channels (e.g., email) provide more time to craft and refine a response.

Importantly, synchronicity is often about expectations. A long pause between texts is less awkward and more expected than a similar pause on a phone call. Specific channel features can also shift expectations. WhatsApp and Snapchat increase expected synchronicity by indicating when communication partners were last active or are currently active.

In highly synchronous channels, language can even be produced and transmitted concurrently. In phone calls, for example, content is automatically and immediately shared with the audience as it is produced. This reduces deliberation by removing any ability to reflect on content while producing. In other channels (e.g., video recordings), production is separated from transmission, adding a layer of asynchrony and increasing the chance to deliberate.
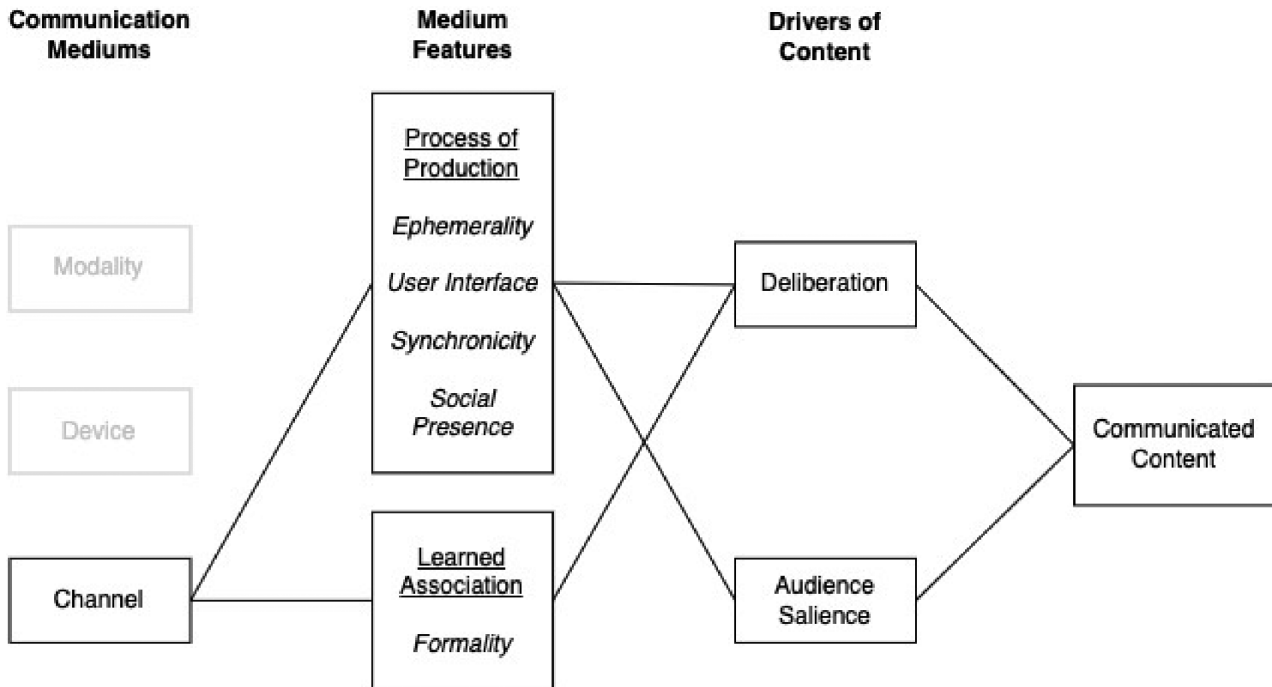
FIGURE 4 How channels impact communication.

Process of production—ephemerality

Beyond interfaces and synchronicity, channels also make content more or less ephemeral (Barnea et al., 2023). In some channels (e.g., face-to-face conversations or Snapchat) communicated messages disappear once delivered and cannot be seen again. Other channels (e.g., emails or voice notes) maintain a record that can be repeatedly reviewed. Instagram stories and Snapchat conversations fall in between, with up to a day before the content disappears.

Ephemerality reduces the propensity to deliberate by increasing the effort required. Communication channels that make prior communication permanent (e.g., email), allow communicators to easily consider, deliberate on, and incorporate past content in future communication. They also reduce the effort required to maintain a conversation, which increases the bandwidth available for deliberation. More ephemeral communication channels (e.g., face-to-face conversations), however, require holding that content in memory (if it is to be used).

Learned association—formality

Much like how speaking has interpersonal associations, and smartphones are associated with maintaining social identities, we suggest that different communication channels have different learned associations based on how they are typically used. Emails, for example, are often constructed in work settings and shared with audiences who tend to be weaker ties. Consequently, email

content is often more thoughtfully and carefully constructed (Grace et al., 2015). Texts, on the other hand, are often sent to stronger ties and produced in contexts where careful content consideration is less common. Once learned, these associations should automatically influence the propensity to deliberate when communicating through different channels, regardless of audience and context.

How channels shape communication: changing audience salience

Beyond deliberation, different communication channels should also affect audience salience. We suggest that channels that encourage synchronous communication, and/or create social presence, should make the communication audience more salient.

Process of production—synchronicity

When quickly messaging back and forth in a live chat, for example, communication partners are focal: who they are, and what they might be thinking and feeling, is top of mind. As inter-turn time increases, however, audiences become less accessible and may be represented more abstractly (Trope & Liberman, 2010). This may make communication feel less like an interpersonal interaction and more like an information exchange (just as writing and PCs are less associated with interpersonal interaction than speaking and smartphones). Said

differently: in synchronous channels, communicators are not just responding to what was said, they are responding to *who* said it.

Synchronicity may also encourage communicators to consider potential audience responses. It is easier to picture how an audience might respond when you know the response is coming quickly. This, in turn, should increase audience salience. When quickly texting back and forth, for example, it is easy to think about how something you say might impact the person on the other end of those messages. Emailing a friend who takes weeks to respond, however, may make it harder to picture how your message will affect them and their response. This may lead asynchronous communicators to think less about their audience when communicating.

Process of production—social presence

Beyond synchronicity, we suggest that channel features should also affect audience salience through their effect on social presence (i.e., the degree to which the audience feels present; Short et al., 1976). Features of communication channels (e.g., hearing an audience's voice, seeing their face, or even seeing text bubbles move when they type) can make the audience feel more "present" while creating a message. This should increase audience salience. Note that social presence and audience salience are conceptually distinct. While social presence is about particular channel features (e.g., profile pictures) that make the audience feel more present, audience salience exists in the mind of the communicator and is increased by a variety of factors including, but not limited to, social presence (e.g., synchronicity).

In face-to-face conversations, communicators can see their audience, read their body language, and hear their voice so social presence (and thus audience salience) is high. Video chatting works similarly but limits the audience to a box on a screen, which should make them less salient. Phone conversations further reduce social presence to merely a voice, which should reduce audience salience even further. Consistent with this notion, communicators tend to be more empathetic and interested in their partner's perspective when interactions take place face-to-face rather than over the phone (Holbrook et al., 2003). Similarly, compared to an online interaction, in-person communication leads to more socially desirable responding (Woodyatt et al., 2016) and less inflammatory expression (Siegel et al., 1986).

Social presence is typically reduced when texting, emailing, or using other written communication channels. In these channels, variation appears to be driven less by channels themselves, and more by particular channel features. Chatting on a platform that includes moving text bubbles when the other person is typing, for example, should make the audience more salient by making them feel more present. Similarly, written communication channels where profile pictures are the norm (e.g., social media sites) should increase social presence and thus audience salience.

Implications and connections

Our suggestion that communication channels affect deliberation and audience salience has important implications for understanding what people communicate across different channels and its consequences. In particular, we suggest that different types of channels should be more persuasive for different types of decisions, based on the types of content they encourage communicators to produce. This builds on the suggestion that the persuasiveness of different types of language (e.g., analogies, questions, or unfamiliar words) varies based on the degree to which audiences process language automatically (vs. deliberatively; Pogacar et al., 2018). We apply this framework to explore how linguistic persuasion might vary across purchase contexts.

High-involvement purchases

Some decisions (e.g., buying a house) are more important, complex, or involved. In these situations, consumers tend to process information more deliberately, devoting more cognitive effort to weighing costs and benefits, and even to processing language as they make their decision (Cacioppo & Petty, 1984; Kahneman, 2011).

In these instances, communication channels that increase the propensity to deliberate (e.g., email) should be relatively more persuasive, because they encourage communicators to produce language that benefits from effortful processing. Channels that decrease synchronicity and ephemerality, for example, and thus increase propensity to deliberate, should make it easier to think of apt analogies and questions that are relevant to the ongoing conversation. This, in turn, should foster persuasion when audiences process language in more controlled ways. Indeed Pogacar et al. (2018) suggest that linguistic devices like questions, analogies, and complex syntax are more persuasive when receivers devote more effort to processing language.

Low-involvement purchases

Other decisions (e.g., where to go for lunch), however, are simpler, less important, or even habitual. In these situations, consumers tend to process information more automatically, devoting less effort to analyzing information and language and leaning more on peripheral cues and intuition (Cacioppo & Petty, 1984; Kahneman, 2011).

In these simpler decision contexts, communication channels that increase audience salience (e.g., video or

live chat) should encourage content that is more persuasive when processed peripherally. Channel features that increase social presence (e.g., profile pictures) or synchronicity increase audience salience. This should encourage the production of content that better acknowledges the audience (e.g., personal pronouns) and that communicates in accordance with established social norms. For example, Pogacar et al. (2018) find that linguistic devices like pronouns (which acknowledge an audience) and politeness (which is an established social norm) are more persuasive when receivers process language automatically.

Generalizing to other mediums

This section focused on how, by influencing deliberation and audience salience, communication channels shape social influence across purchase contexts. Similar effects should extend to other mediums (i.e., modalities and devices) that also influence these same drivers. By impacting deliberation and audience salience, for example, smartphones (compared to PCs) and writing (compared to speaking) should impact the linguistic devices consumers use and their persuasive impact as a result. More generally, this discussion raises several interesting questions for future research (Table 4).

GENERAL DISCUSSION

Whether sharing word of mouth, searching for information, or chatting with salespeople, consumers are constantly communicating. Further, salespeople, service representatives, and a range of marketplace actors are constantly communicating with consumers.

But while it is clear that communication is frequent and important, it is less clear how the mediums through which communication occurs impact what gets shared.

This paper fills this gap. While disparate streams of work have examined how modality, devices, and channels each independently shape communication, there has been less attention to how these pieces fit together. By combining mediums, and their effects, into a comprehensive conceptual framework, we shed light on how communication mediums shape the messages produced (see Web Appendix Figure 1A for expanded model).

Applying the framework

By illuminating how mediums impact the drivers of produced content, the framework generates novel predictions about how mediums shape the content communicators produce (Figure 5). Due to increased opportunity for deliberation, for example, writing, smartphones, and email should generate content that is more organized, more

TABLE 4 Examples of future research questions.

1. Do mediums affect not just the propensity to produce content like analogies and metaphors, but also their quality?
2. Do communication mediums shape content in ways that impact message recall or understanding?
3. Do communicators intuit the effect (and effectiveness) of different communication mediums for discussing different types of decisions (e.g., gravitating towards discussing high-involvement purchases in asynchronous channels)?
4. Do certain mediums naturally increase audience involvement and effortful processing (e.g., reading more closely on a small screen)? Might this make certain forms of language (e.g., questions and analogies) more impactful?

reflective, and more normative than speaking, smartwatches, and text, respectively. Similarly, due to increased audience salience, speaking, smartphones, and live chat should generate content that is more concrete, more honest, and more emotional than writing, PCs, and message boards, respectively.

In addition, the framework should help communicators strategically select communication mediums to generate desired content. Healthcare providers who want patients to provide a thorough list of sensitive/embarrassing symptoms might want to increase deliberation and decrease audience salience (e.g., by having consumers write an email with their PC). Market researchers who want consumers to brainstorm many personal uses for a new product, however, might want to balance *both* deliberation and audience salience (e.g., writing in a live chat via smartphone). See Web Appendix Figure 2A for more examples.

Directions for future research

This discussion also raises interesting questions for future work.

Can findings from one type of medium inform another?

Integrating different mediums into one framework allows one to leverage and extend established findings to emerging contexts where less work has been done. While much research has examined effects of communication modalities (i.e., speaking and writing), for example, there has been less attention to devices or channels. But given the underlying drivers are similar, theories developed for one medium may also extend to others.

To illustrate, consider smartphones (vs. PCs). While research on their effects is just emerging, they should impact communication much in the same way speaking (vs. writing) does. Both smartphones and speaking increase audience salience (because of learned associations) and decrease propensity to deliberate (because of the increased difficulty of thinking while
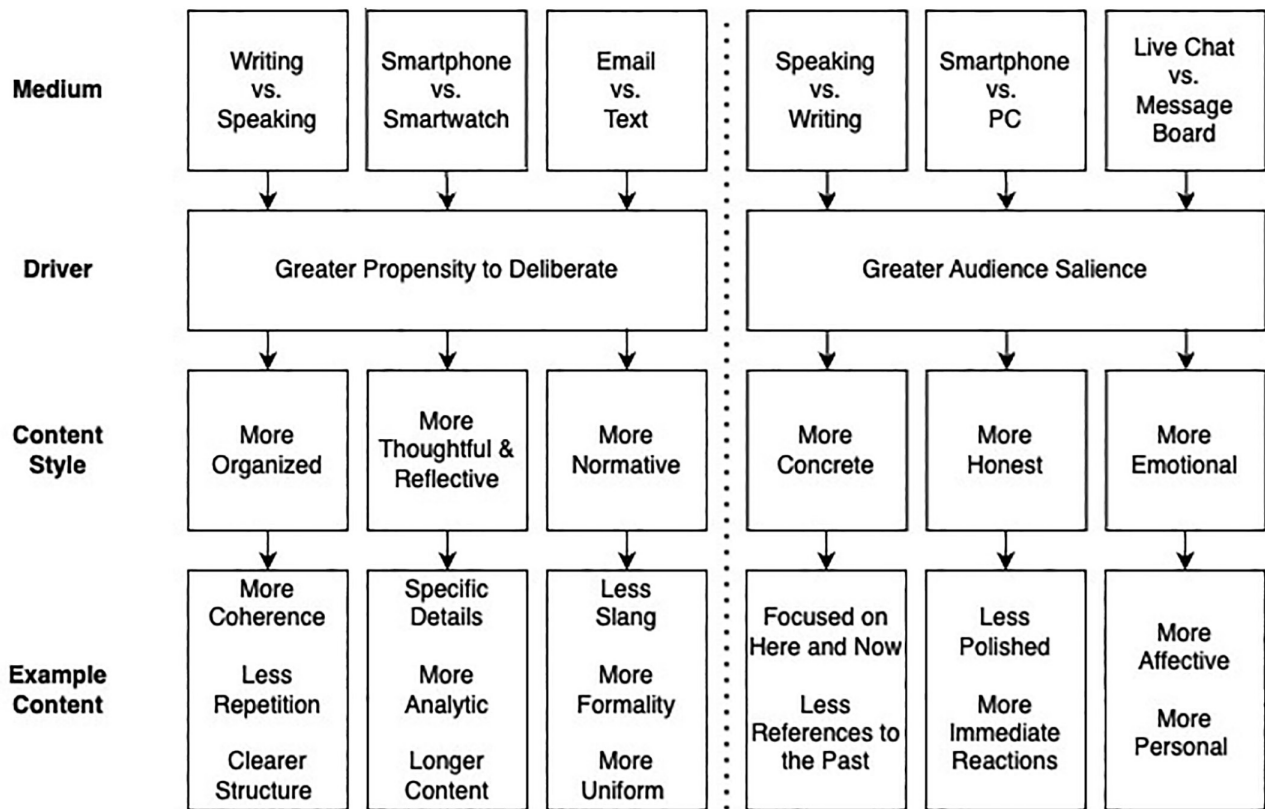
FIGURE 5 How communication mediums affect common styles of content.

communicating). Consequently, much of speaking's effects (Berger et al., 2021; Berger & Iyengar, 2013; Shen & Sengupta, 2018) should extend to smartphones, generating testable predictions. Texting compared to email may also have similar effects, and there may be others.

How will novel technologies affect communication?

The framework can also be used to anticipate effects of novel (and even future) technologies. Technological advancements have, and will continue to, create new ways to communicate. By abstracting away from effects of particular mediums, though, and focusing on the underlying mechanisms through which all mediums shape communication, we can deepen understanding of existing mediums while shedding light on new ones.

Virtual reality, for example, is starting to gain traction, and our framework provides a foundation to predict its likely effects. Given their use in multi-player games, for instance, VR devices may generally be associated with social contexts, which should increase audience salience. The degree to which this occurs, however, may depend on other channel features. When VR channels offer close approximations of the communication audience, for example, they should increase audience salience, but if they render other people as avatars or non-human entities, audience salience may be reduced.

Augmented reality channels like the Metaverse may also soon render three-dimensional "images" of an audience in a communicator's physical space (Rosenberg, 2022). While this technology itself is unprecedented, its effects should be quite predictable. Making it feel more like the audience is "present" while communicating should increase social presence and thus audience salience. This should, for example, make communicators more likely to generate self-enhancing and socially bonding word of mouth.

Input formats within devices are also changing. There are many ways to "type" on smartphones (e.g., tapping letters, dragging a finger between them, or starting with letters and selecting words from predictive text). These varying formats should impact communication. Formats that increase or decrease production speed, for example, should affect propensity to deliberate. Similarly, tools like the predictive text bar may circumvent the need for deliberation by suggesting words communicators would typically have to think more about to access.

How do other communication factors shape mediums' effects?

Future research might also examine whether communication goals, audience factors, and communicator differences moderate mediums' effects. Mediums' impact on

audience salience, for example, is likely moderated by audience characteristics (e.g., tie-strength). Given how well communicators know them, close ties are likely richly represented in a communicator's mind regardless of medium. Consequently, the reduction in audience salience due to written mediums or asynchronous channels (e.g., email) is likely smaller.

Mediums' effects may also vary across types of communicators. Writing, for example, decreases audience salience because, for most of human history, it had a weaker association with interpersonal communication (Akinnaso, 1982). A generation of communicators have now grown up with smartphones from early adolescence, though, and have been using smartphones to write to others more habitually. Do these communicators experience a smaller decrease in audience salience when writing (compared to speaking) if that writing happens digitally? If so, are these communicators more likely than their parents to avoid searching for sensitive products/information when writing search queries digitally?

Mediums' impact may also vary across communication goals. Goal difficulty, for example, may change the extent to which mediums shape language. Consider someone who intends to produce a complex lie. The fact that PCs increase propensity to deliberate should allow them to more easily meet this goal and should lead to a lie that is more complex and detailed than one created on a smartphone. However, if this person's goal is to produce a simple lie, the language they produce on a PC (vs. smartphone) should be much more similar. Similarly, email and live chat may be equally effective for customer support for simple products but produce entirely different solutions, interactions, and satisfaction for more complex ones.

Do mediums bias language's ability to reflect thought?

Mediums may also shape language's ability to reflect thought. It is often said that language reflects the mental states of the people that produce it (i.e., their thoughts, attitudes, and likely future actions, see Berger et al., 2020 for a review). One can predict whether consumers will default on a loan, for example, based on the language they use in their application (Netzer et al., 2019) or whether they will escalate a complaint based on their use of passive voice (Sepehri & Berger, 2023). However, the fact that the mediums through which one produces language change the language produced means that language is actually a combination of (1) truths about the communicator and (2) the communication mediums used.

Consequently, language's predictive value likely depends on the medium through which it was produced. Language produced through relatively non-deliberative mediums (e.g., speaking or smartphones) may be more diagnostic than language produced through more deliberative mediums (e.g., writing and PCs), for example, because while the former is relatively off the cuff, the latter gives communicators more opportunity to think about what is communicated, and thus it may be less likely to reflect their true selves. Alternatively, language produced through deliberative mediums (e.g., written communication, email, or on a PC) might be more reflective of communicators' thoughts and feelings because they give people the chance to think about how they feel and reflect that in the content produced. Either way, future research should investigate if certain mediums best reflect communicators' inner thoughts and why.

More interestingly, as anyone who has ever tried to put abstract ideas into concrete words knows, all language is an imperfect reflection of thoughts and feelings. However, communication mediums may distort language's reflection of consumer thought in predictable ways. Language produced in mediums where audiences are more salient, for example (e.g., video chat), are likely to be a more emotional reflection of true thoughts while mediums that increase deliberation (e.g., email) are likely to bias communication by dampening the transmission of a communicator's felt emotion.

How do interactions between mediums shape content?

We explored how communication mediums influence the content communicated, but future work might more deeply examine how mediums interact. The extent to which editability (dictated by communication modality) influences content, for example, likely depends on synchronicity (dictated by communication channel). Writing is usually more editable than speaking, but this should matter less in extremely synchronous channels (e.g., live chat or phone calls) because writers do not have time to edit. Similarly, in highly asynchronous channels (e.g., voicemail or email), communication's asynchronous nature gives even speakers time to revise (i.e., they can delete and re-record their message until satisfied). Consequently, extremely low and extremely high levels of synchronicity likely weaken editability's effect.

This has important implications. A salesperson selling a utilitarian product, for example, may want to write, rather than speak, to increase deliberation and form rational, persuasive arguments. But this strategy should be less effective at high and low synchronicities (Table 5).

How do mediums impact other forms of consumer behavior?

We focused on how mediums shape language production, but similar effects should extend to other types of content (e.g., images, videos, or paralanguage). People

TABLE 5 How modality and channels interact to shape content.

Channel feature	Modality	Medium	Effect
High Synchronicity	Writing	Live chat	Written content should appear more like spoken content due to high synchronicity reducing the impact of the easy editability of writing
	Speaking	Phone call	
Moderate Synchronicity	Writing	Text message	Written content and spoken content should diverge maximally as the easy editability of written content provides more opportunity for deliberation
	Speaking	Voice note	
Low Synchronicity	Writing	Email	Spoken content should appear more like written content due to low synchronicity enabling speakers to rehearse and revise their content in a way that is not possible in more synchronous channels
	Speaking	Voicemail	

often share images and videos, for example, and channel and device features should impact the nature of what is shared. Similarly, speakers vary their volume, speed, and pitch, and medium features may impact them as well (Van Zant & Berger, 2020).

Mediums should also influence other outcomes beyond content production. By impacting deliberation and audience salience, for example, might different devices, channels, or modalities shape the types of choices consumers make? Might speaking's heightened audience salience lead to healthier choices by making consumers more mindful of the social signals of their choices? Might voicemail's increased opportunity for deliberation generate more realistic and achievable savings goals than a phone call? Similarly, while consumers use devices to search for content, they are also the context where such content (e.g., breaking news or branded advertisements) is selected and consumed. Might audience salience (e.g., generated by smartphones) activate self-presentation concerns and cause consumers to choose content that portrays them in a better light? Might the decreased opportunity for deliberation caused by smartphones' smaller screens and their on-the-go usage make consumers less discerning or even less critical of the content they consume? These are only a few examples of questions that deserve further attention.

CONCLUSION

Communication is an integral part of consumer behavior. Consumers share word of mouth, salespeople pitch products, and customer service agents communicate solutions. Communication, however, does not happen in a vacuum. It is produced through a mode (i.e., speaking or writing) a channel (e.g., text or email), and often through a device (e.g., smartphone or PC). These mediums shape communication. By integrating modalities, channels, and devices into a comprehensive conceptual framework, and delineating the underlying processes that drive their effects, we hope to shed light on how mediums shape the message.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.