HOW COMMUNICATION MEDIUMS SHAPE THE MESSAGE

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Abstract

Communication is an integral part of everyday life. Consumers chat with friends, for example, search for information, and complain to customer service. Salespeople pitch products, market researchers ask questions, and employees answer them. But communication doesn't occur in a vacuum. Consumers communicate *through* modalities (e.g., speaking or writing), channels (e.g., text, phone call, or email), and devices (e.g., smartphone or computer). While these mediums often seem incidental, might they impact communication, and if so, how? This paper offers a comprehensive framework for understanding how these 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. 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.

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. People spend 50%-80% of the day communicating (Klemmer and Snyder 1972) and even online search requires communicating desired information to products like Google or Alexa.

Not surprisingly, then, communication has wide-ranging impacts on consumer behavior. Interpersonal communication shapes everything from attitudes and evaluations to choices and purchases (Babic Rosario et al. 2016; Herr, Kardes, and Kim 1991; Moore 2012; Moore and Lafreniere 2020; Packard, Moore, and McFerran 2018). Word of mouth, for example, increases product awareness and trial (Van den Bulte and Wuyts 2009), and more positive reviews increase sales (Chevalier and Mayzlin 2006). Similarly, small variations in consumer search can greatly impact consideration sets and choice (Bettman 1979).

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

Communication happens through a modality (e.g., voice or text) and channel (e.g., face to face or email), and often with the aid of a device (e.g., smartphone or computer). But while modalities, channels, and devices are vital for communicating, they're often thought of as incidental: simply the vehicle through which communicators happen to deliver their message. But 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 how they do so through the same underlying processes.

The paper makes four main contributions. First, we integrate disparate research streams

into a single, comprehensive framework. Individual papers in marketing, psychology, linguistics, and other disciplines have begun to examine how particular communication mediums impact what and how people communicate. 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 literature on communication modality, while also building a foundation for evolving mediums where less work has been done (i.e., devices and channels).

Figure 1. How mediums impact communication

Second, we highlight the underlying processes behind these effects. While individual papers have shown effects of a particular medium in a particular context, without knowing why these effects occur, it's 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 identifies areas for future research. Similarities between the drivers behind communication mediums, for example, 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 instance, so if speaking (rather than writing) tends to lead 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, to the extent to which they enable or encourage 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 exploration of a complex and multifaceted phenomenon, choices regarding scope must be made. This paper examines how communication mediums impact the content communicators produce. While other factors (e.g., individual differences, communicator motivations, and the audience) may also shape communication, note that such effects are not driven by the *act* of communication itself, and certainly not by the mediums used to communicate. Communicators may consciously tailor messages to match their audiences (Baumeister and 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 fact that they are talking on the phone (rather than texting), will affect what is said during the conversation (and potentially how comforting the interaction ends up being). Indeed, experimental evidence demonstrates that even holding communicator goals and audiences constant, modalities and devices still shape communication (Berger and Iyengar 2013; Shen and Sengupta 2018; Melumad, et al. 2019).

Consequently, while these other aspects clearly matter, we focus on the effects of mediums because they have received less attention. While communicators are often quite aware of how their goals or audience shapes what they communicate, they're often 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, Rocklage, and Packard 2021; Melumad, Inman, and Pham 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 main effects overall, and we discuss such potential interactions in the General Discussion.

To develop these contributions, we start by discussing communication mediums, and the key drivers of their effects on communication (i.e., deliberation and audience salience). Then, we explore how modality, device, and channel each influence these two drivers through the process of producing content and learned associations specific to each medium. We then discuss how this framework explains novel effects of emerging technologies, and sheds light on 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 and will continue to in the future. Communication channels are the vehicles through which content is delivered to audiences. Phone calls, texts, emails, video conferences, 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 medium category 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 and Sengupta 2018). Similarly, work on communication devices suggests their effects are driven by the *effort* required to produce content (e.g., Melumad, Inman, and Pham 2019), device

portability (e.g., Ransbotham, Lurie, and Liu 2019) and the *association* between devices and social interactions (e.g., Melumad and Meyer 2020). Finally, work on communication channels suggests that differences in *social presence* shapes communication (e.g., Duthler 2006), and work suggesting that *synchronicity* (e.g., Berger and Iyengar 2013) and *ephemerality* (e.g., Jahandarie 1999) drive modality's effects may actually be discussing differences in channels.

While this laundry list of constructs is tough to follow, 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, the editability of content, the 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. When communication 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 as they work to achieve communication goals. 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 the “hot”, intuitive, affective reasoning of system one processing to the “cool”, rational, cognitive reasoning of system 2 (Kahneman 2011). This may decrease the emotionality of not just the content produced (Berger, Rocklage, and Packard 2022) 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. 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 say might impact their audience, and thus increases the motivation to use language that is appropriate for and relevant to the 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 exchange of information and an interpersonal interaction, increasing 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 and 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, Inman and Pham (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 rather than responding impetuously” (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 also contains similar hints about audience salience. In the context of modality, for example, Shen and Sengupta (2018 p. 596) 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, in the context of devices, 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 in the context of channels, Skierkowski and Wood (2012) suggest a strong association between

texting and interpersonal interaction because text messaging is involved in the daily maintenance of relationships. 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 two concepts, a review of all papers examining effects of communication mediums published in JCR, JMR, JCP, JM, and Mktg Sci in the past 50 years (Table 1) finds that deliberation and audience salience (or an ostensibly identical construct) are highlighted as explanations for the proposed or observed effects.

Table 1: Marketing Papers Studying the Effects of Communication Mediums

<i>Deliberation</i>	
Berger and Iyengar (2013)	Written (compared to oral) communication gives consumers more time to construct and refine what to say (i.e., what we describe as deliberation).
Berger, Rocklage, and Packard (2021)	Compared to speaking, writing increases deliberation.
Melumad and Meyer (2020)	Smartphones (compared to PCs) require more effort to generate content, which we argue reduces available resources for deliberation.
Ransbotham, Lurie, and Liu (2019)	Mobile word of mouth (compared to PCs) is created on the go, which we argue reduces the propensity to deliberate while communicating.
Melumad, Inman, and Pham (2019)	Communicating on smartphones (compared to PCs) is more physically constraining, which we argue that this reduces the ease of deliberating while creating communication.
Melzner, Bonezzi, and Meyvis (2022)	Oral (compared to manual) information disclosure increases synchronicity, and reduces processing resources, which we argue reduces both the time, and capacity, for deliberation.
<i>Audience Salience</i>	
Shen and Sengupta (2018)	Speaking about a brand, rather than writing about it, leads to a greater focus on social interaction, which we argue increases audience salience.
Melumad and Meyer (2020)	Smartphones (compared to PCs) are more frequently used for interpersonal communication, which we argue increases audience salience.
Melzner, Bonezzi, and Meyvis (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.

Second, deliberation and audience salience also make sense from a theoretical perspective. Theory often describes behavior 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) someone talking with an acquaintance, for example, 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

Some work suggests that modality (e.g., speaking or writing) shapes communication. Speaking involves producing words through voice. People speak face to face, over video conferences, and while dictating text messages to virtual assistants. Writing, in contrast, is text based. People write emails, text messages, and comments on social media. Speech has been characterized as more personal, social, self-disclosing, and informal (Akinnsaso 1982; Chafe and

Tannen 1987; DeVito 1996; Rubin 1987) while writing has been characterized as more formal, detached, and complex (Akinnaso 1982; Biber 1986; Chafe and Tannen 1987; Horowitz and Newman 1964; Rubin 1987). Speakers tend to produce more emotional language than writers, for example, which can make what they share more persuasive (Berger, et al., 2021).

Understanding modality's impact, however, requires disentangling its effects from other aspects of communication. Take the notion that speech is more synchronous than writing (Akinnaso 1982). While this is often true, some ways of speaking (e.g., voicemail) are less synchronous than some ways of writing (e.g., instant messenger). A closer look shows that rather than being driven by modality, synchronicity actually depends on the communication channel. Truly understanding modality's effects 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).

Figure 2. How modality impacts communication.

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 produced content.

Process of Production – Speed

The same content takes longer to write than speak (Fondacaro and Higgins 1985; Akinnaso 1982), 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 (Linell 1998; Jahandarie 1999) 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, the soundwaves they produce are non-physical and as a result cannot be easily edited. This difference in the editability of produced content makes deliberation difficult because even when speakers have time to plan before (or while) producing content, they can only hold so much in working memory without writing it down (Horowitz and Newman 1964; Melzner, Bonezzi, and Meyvis 2022).

The fact that speaking can't be edited also makes communication difficult to revise. Revision is impossible in most spoken communication channels, but even when channel features

(e.g., a recorded message) allow for revision, it still can't be done 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's impossible to edit individual parts. The whole message must be deleted and re-recorded.

The editable nature of writing, however, allows it to be revised before sharing. Writers can replace words, edit structure, and even change entire themes 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, compared to writing, speech is not editable and produced at a speed that does not allow for easy deliberation.

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. This should be driven by differences across communication modalities in the extent to which each is 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, Kleiman, and Rubin 1977). Consequently, speaking can put communicators in

an interactive mindset where they are more aware of, and focused on, their audience. Indeed, as noted, research suggests that speakers “are more focused on the interaction with the audience...while writers are focused on the information to be conveyed” (Shen and Sengupta 2018 p. 596; also see Chafe 1985; Fondacaro and Higgins 1985). Further, the association between speaking and audiences is so strong that even when no other person is present, speaking to virtual assistants leads consumers to imagine an audience (and their potential reaction) and alter their search queries as a result (Melumad 2023).

This doesn’t mean that writing can’t involve salient audiences. One may think about others, for example, when participating in a large family group chat on WhatsApp. In these situations, however, it is important to consider whether writing, itself, is making the audience salient, or whether 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 this is more due to the communication topics and audience than modality itself. Given the same audience, communication topic, and channel, speaking (e.g., through voice notes) should still increase audience salience compared to writing.¹

Implications and Connections

Our suggestion that different modalities shape deliberation and audience salience has important implications for communication in a variety of consumer contexts. Take the customer journey. In this foundational consumer theory, Engel, Kollat, and Blackwell (1978) explain the

¹ While research has focused on the differences between speaking and writing, the same logic applies to modalities like sign language. Signing’s faster production speed (compared to writing) and ephemeral nature both reduce the propensity to deliberate. Sign language is also used primarily in interpersonal contexts, while writing can be used for many intrapersonal purposes. As a result, the act of signing should increase audience salience. These effects on deliberation and audience salience should affect what and how signers communicate.

stages that consumers navigate leading to purchase: 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 and hearing about a co-worker's new laptop can encourage someone to consider the shortcomings of their own.

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 them 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 and Sengupta 2018). Speakers also tend to use more active voice (Chafe and 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 represents an important difference in problem definition and, as a result, 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, Packard, and Rocklage 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

Information search can also happen through writing (e.g., in a search bar) or speaking (e.g., to a virtual assistant) and this modality difference can determine what people 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 for damaged hair" when writing, for example, speaking might lead them to shift to something more like "shampoo that gives my hair the best volume and bounce." 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 to gather information more effectively. 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 linguistic content that is more well-reasoned, structured, organized, and thoughtful than speaking. Indeed, compared to speaking, writing tends to create more complex, elaborate, and integrated structures (Biber 1986; Chafe, 1982; Gumperz et al. 1984) and involves 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) while speaking may lead to more intuitive “system 1” processing. This can change what product attributes consumers find appealing and what arguments they find convincing (Petty and Cacioppo 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 effects for how alternatives are evaluated, and purchases made.

Generalizing to Other Mediums

This section focused on how modalities affect the buyer decision process by shaping the language consumers use to navigate purchases, but similar effects should extend to other mediums (i.e., devices and channels). By impacting propensity to deliberate and audience salience, for example, communicating via live-chat (compared to email) should influence the problems consumers perceive, information they search for, and evaluation of alternatives. More generally, the interplay between communication mediums and the buyer decision process raises various interesting questions for future research (Figure 3).

Figure 3. 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?

How Devices Shape Communication

Beyond modality, devices should also impact communication. Devices (e.g., smartphones, computers, tablets, smart watches, 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 device, and while spoken communication often involves devices (e.g., a phone), it can be produced without one (e.g., face to face conversations).

Many devices could be studied, but early work focused on computers (e.g., Walther 1996; Sproull and Kiesler 1991) and more recent work has focused on smartphones (contrasting them with personal computers/PCs). Content produced on smartphones tends to be shorter, less focused on specific details, more emotional, and more self-disclosing (Melumad, Inman, and Pham 2019; Melumad and Meyer 2020), while content generated on personal computers tends to be more abstract, extreme, and reflective (Ransbotham, Lurie, and Liu 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 4).

Figure 4. How devices impact communication.

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, Couper, and Conrad 2017; Raptis et al. 2005). The same holds for speaking (albeit potentially to a smaller degree). Smartphones 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. 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 and Meyer 2020) reduces capacity for deliberation. Consistent with this notion, compared to PCs, smartphone users tend to produce shorter, less detailed, content (Melumad, Inman, and Pham 2019; Ransbotham, Lurie, and Liu 2019).

Process of Production – Portability

A device's portability should also impact deliberation. Smartphones, for example, are much more portable than PCs. Portability decreases the time between experience and communication. A restaurant goer can write a review right away if they have their smartphone handy, for example, but have to wait longer to use their PC. Portability also makes devices usable in more distracting contexts. Smartphones, for example, are often used while in transit or waiting for something to happen, while PCs tend to be used when people are more focused on the task of communicating. These factors should reduce the propensity to deliberate because they reduce the time and bandwidth available. Consistent with this notion, smartphones tend to encourage communicating topics that are top-of mind (Melumad and Meyer 2020), rather than those that require deliberation.²

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.

² Note that while existing research has focused on smartphones and personal computers, the same logic should extend to other devices (e.g., smart watches). Smart watches are more mobile than smartphones, have smaller screens, and make communication more difficult (i.e., tracing out letters with fingers or slowly tapping individual letters on a scrolling keyboard). All of this should discourage the propensity to deliberate.

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, Brohl et al, 2018), for example, smartphones are often used to connect with others and maintain social identities. Consequently, they are imbued with social associations (Skierkowski and Wood 2012; Melumad and Pham 2020; Okazaki 2009).

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 (Berger 2014). People may want to re-live positive experiences, for example, and sharing gives them that opportunity (Rimé 2009). By shaping what gets communicated, however, our framework suggests that devices should impact consumers' ability to effectively re-live such experiences.

Take smartphones. Our suggestion that communicating through smartphones reduces propensity to deliberate may lead communicators to focus more on the gist of experiences rather than on 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 re-live an experience. Saying “dessert was amazing,” for example, is emotional, but doesn’t 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, seek advice, and resolve problems (Dichter, 1966; Berger 2014). 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, Lurie, Liu 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 are more likely receive more detailed and insightful responses (e.g., “The new Google Pixel phone has Night Sight, specifically designed to take better photos in the dark”). In this way, PCs should allow consumers to produce content that helps them more effectively acquire information to navigate complex decisions.

Impression Management

Consumers also share word of mouth to manage impressions (Berger 2014; Chung and Darke 2006; Lampel and Bhalla 2007). Much like speaking, our framework suggests that devices associated with interpersonal communication (e.g., smartphones) should increase audience salience and, as a result, encourage consumers to produce content that makes them 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 future consumers have access to as well.

Social Bonding

Word of mouth is also driven by the desire to forge and maintain social bonds (Rimé 2009; Berger 2014). Such sharing privileges common ground, reinforces shared views (Ritson & Elliott 1999), and reduces loneliness (Lakin, Chartrand, & Arkin, 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, Lurie, and Liu 2019). This shift should lead word of mouth produced on smartphones to better facilitate social bonding and create 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 and 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 preference are taste-based, the affective language devices like smartphones encourage may be more impactful.

Word of mouth can also impact communicators. Our framework suggests that PCs encourage language that is more analytical and reasoned (due to increased propensity to deliberate). More analytical and explanatory language increases communicators' evaluations of positive experiences with utilitarian items (Moore 2021), so drafting such a review using a PC should generate language that makes reviewers evaluate that experience more positively.

Generalizing to Other Mediums

This section focused on how devices shape word of mouth by shaping what consumers share, but similar effects should extend to other mediums (modalities and channels). By

impacting deliberation and audience salience, for example, speaking (rather than writing) should impact what consumers share and its consequences. More generally, this discussion raises a number of interesting research questions for future research (Figure 5).

Figure 5. 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 content. Communication channels (e.g., text message, email, phone call, and face to face conversation) 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). Individual social media platforms (e.g., Facebook or Snapchat), email clients (e.g., Outlook vs. Gmail), and messaging platforms (iMessage vs. SMS) also represent unique communication channels because of the different features and associations specific to each. 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 6).

Figure 6. How channels impact communication

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 specific to each channel. Specifically, producing content through channels where (1) user interfaces make communication more effortful, (2) communication is more synchronous, or (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 influences the ease of content production. Similar to 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 for deliberation (much 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 video 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 and Keaten 2007). This difference in synchronicity, in turn, allows communicators more time to formulate communication before sharing it (Chan 2011). If someone is asked about their favorite restaurant in face-to-face communication, for example, they tend to want to respond quickly so the silence doesn’t become uncomfortable (Blass and Siegman 1975; Horowitz and Newman 1964; Stivers et al., 2009). But less synchronous channels (e.g., email) provide more time to craft and refine a response.

In highly synchronous communication, language can even be produced and transmitted concurrently. In phone calls, for example, content is automatically and immediately shared with the audience as soon as it is produced. This further reduces deliberation by removing any ability to reflect on content while, or after it is produced.

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.

Process of Production – Ephemerality

Beyond interfaces and synchronicity, channels also make content more or less ephemeral (Barnea, Meyer, and Nave 2022). In some channels (e.g., face to face conversations or Snapchat) communicated messages disappear after they are delivered and are unable to be seen again. Other channels (e.g., emails or voice notes) maintain a record that can be repeatedly reviewed. Instagram stories and snapchat conversation fall in between, as communicators have up to a day before their 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 such 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 formal work settings to audiences who tend to be weaker ties. Consequently,

email content is often more thoughtfully and carefully constructed (Grace, Kemp, Martin, and Parila 2015). Texts, on the other hand, are often sent to stronger ties and produced in contexts where careful consideration of linguistic content is unnecessary. 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 and Liberman, 2010). This, in turn, may make communication seem less like an interpersonal interaction and more like 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's 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's 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 producing communication.

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, Williams, and Christie 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. Such features, not surprisingly, 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 of communication partners) 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 quite high. Video chatting works similarly but limits the audience to a box on a screen, which should reduce their salience. 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, Green Krosnick, 2003). Similarly, compared

to an online interaction, in person communication leads to more socially desirable responding (Woodyatt, Finneran, and Stephenson 2016) and less inflammatory expression (Siegel et al. 1986). The heightened social presence of face-to-face increases audience salience, which should encourage responding in ways others view favorably.

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 that may or may not be used in a given channel. 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. more deliberately; Pogacar et al. 2018). We apply this framework to explore how linguistic persuasion might vary across purchase contexts.

Controlled Processing of Language

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 (Kahneman 2011; Petty and Cacioppo 1984).

In these situations, 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) suggests that linguistic devices like questions, analogies, and complex syntax are more persuasive when receivers devote more effort to processing language.

Automatic Processing of Language

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 (Kahneman 2011; Petty and Cacioppo 1984).

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) finds 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 communication channels shape social influence, but similar effects should extend to other mediums (i.e., modalities and devices). By impacting deliberation and audience salience, for example, smartphones (compared to PCs) 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 (Figure 7).

Figure 7. 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?

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's less clear how the mediums through which communication occurs impact what gets shared.

This paper integrates research from various disciplines to fill 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 disparate 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 (Figure 8).

Figure 8. How modality, devices, and channels shape communication

Directions for Future Research

This discussion also raises interesting questions for future work.

Can Findings from One Category of Mediums Inform Another?

One benefit of integrating different mediums into one framework is that it 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.

Take smartphones (compared to PCs). While research on their effects is just emerging, they should impact communication much in the same way speaking (compared to 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 communicating). Consequently, much of speaking's effects (Berger and Iyengar 2013; Shen and Sengupta 2018; Berger, Rocklage, and Packard 2022) should extend to smartphones, generating testable predictions about devices' effects. Texting compared to email may also have similar effects. By highlighting matching effects of different mediums, our framework enables comparisons like these, and more.

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 the framework outlined here 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 the role of communication goals, audience factors, and communicator differences in moderating 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 written mediums or asynchronous channels (e.g., email) is likely smaller for close ties.

Similarly, mediums' effects may vary across types of communicators. Writing, for example, decreases audience salience because, for most of human history, it has had a weaker association with interpersonal communication (Akinaso 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. The difficulty of a communication goal, 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 compared to a smartphone should be much more similar. Similarly, email and live-chat may be equally effective for engaging customer support for simple products but produce entirely different solutions, interactions, and

levels of satisfaction for more complex ones.

How Do Mediums Impact Message Reception?

Mediums also shape how communicators and their messages are perceived. Compared to writing, for example, the mere act of speaking can humanize communicators (Schroeder, Kardas, and Epley 2017), highlighting their capacity to think, and lead them to be perceived as more competent, thoughtful, and intelligent (Schroeder and Epley 2016). Importantly, these effects occur even controlling for communication content, suggesting that inferences from other modality features (e.g., paralanguage in voice) are driving the effects.

Additionally, different mediums impact the propensity to deliberate while *producing* communication, but may also affect the extent to which audiences deliberate as they *receive* communication. Channels that reduce ephemerality, for example, should make it easier for audiences to think over communication they have received. These differences are likely to have important implications for how communication is received, internalized, and then acted on. Indeed, as Pogacar et al. (2018) explain, the persuasive impact of different linguistic devices (e.g., analogies) depends on the extent to which a communication audience is processing language effortfully.

How 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 things about the people that produce them (i.e., their thoughts, attitudes, traits, states, 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 predict whether someone will escalate a complaint based on their use of passive voice (Sepehri and Berger 2023). But the fact that the mediums through which one produces language changes the language produced means that produced language is actually a combination of (1) the communicator's thoughts and (2) the communication mediums used.

Consequently, the predictive value of language likely depends on the mediums through which it was produced. Language produced through relatively non-deliberative mediums (e.g., speaking or smartphones) may be more diagnostic of an individual's actual attitudes 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 communicator's 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, 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), is likely to be a more emotional reflection of a communicator's true thoughts while mediums that increase deliberation (e.g., email) are likely to bias communication by dampening the transmission of a communicators felt emotion.

What are the Potential Sociolinguistic Implications of Communication Mediums?

To this point, we've focused on how mediums impact interpersonal communication, but there may also be even larger sociolinguistic implications. Mediums that increase the propensity to deliberate, for example, may decrease reliance on popular words and expressions in favor of more unique language. Consequently, what mediums are popular among different cultures, may shape the linguistic diversity used by that culture more generally (e.g., the number of unique words used).

Similarly, mediums that increase audience salience may also affect the use of normative language within a culture. While greater audience salience may increase the desire to embody collectivist values (e.g., cohesion, harmony, interdependence, and communal communication styles) in collectivist cultures (e.g., East Asian cultures, Hofstede 2009), it may increase the motivation to be distinctive in more individualistic cultures that value independence, and unique communication styles. This may cause different communication mediums to have different effects on linguistic diversity around the world.

Do Communication Mediums Impact Other Types of Content?

While we focused on language because that is where the most research has been done, similar effects should extend to other types of content (e.g., vocal features, non-verbal cues, or images). Speakers, for example, can vary their volume, speed, and pitch, which can have downstream effects on communication audiences (Van Zant and Berger 2020; Akinnaso 1982). Research might explore how different channels change how consumers use any and all of these elements of communication. For example, does the lack of visual information in a phone call (compared to a video chat) lead consumers to lean more heavily on vocal elements like pitch and

volume? Channels like Instagram posts and Facebook posts allow communicators to communicate through images while TikTok and Instagram Reels allow consumers to communicate through video. Research might explore how differences between the process of producing content and the learned associations with each of these channels might change characteristics of the images and videos consumers produce.

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, doesn't happen in a vacuum. It is produced through a mode (i.e., speaking or writing) and 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 communication.

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