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**Does Your Demonstration Tell the Whole Story?
How a Process Mindset and Social Presence Impact the Effectiveness of Product
Demonstrations**

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Keywords: product demonstration, mental simulation, cognitive flow, narrative transportation, purchase intentions, digital demonstration

**Does Your Demonstration Tell the Whole Story?
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Product demonstrations are powerful promotional tools which can vary in how they present information, either illustrating step-by-step processes, or showcasing final outcomes customers may achieve after product usage. Our research investigates customers' cognitive and social experiences while viewing product demonstrations to reveal which type is most effective in driving purchase intentions. Drawing on theories of mental simulation, cognitive flow, and narrative transportation, we propose that when a customer views a demonstration with a process (versus outcome) focus, this encourages a cognitive flow state which facilitates customers' absorption into the product story, and results in increased purchase intentions for the demonstrated product(s). Effects are attenuated when the customer experiences the social presence of other audience members. We find support for our proposed process across five studies using multiple product categories and presentation modalities and offer practical guidance to help marketers optimize product demonstrations to motivate purchasing in a constantly evolving, increasingly digital marketplace.

Keywords: product demonstration, mental simulation, cognitive flow, narrative transportation, purchase intentions, digital demonstration

Product demonstrations have been evolving as a standard marketing practice since peddlers piled their wares into wagons and traveled the country, educating potential customers on the benefits associated with purchasing their products. Door to door demonstrations hit their peak in the 1950s (Knott 2017), and since then, television, in-store, and online product demonstrations have gained in popularity. For instance, “on-demand” video demonstrations are increasingly becoming available via company websites and video sharing platforms such as YouTube. Live video shopping is a newer phenomenon that in 2019 served a market of \$66 billion in China alone and is expected to grow globally (Toh and Wang 2020). This form of shopping is centered around a live online demonstration, and readily translates to social media platforms including Facebook Live and Instagram Live. Further, video-sharing app TikTok enables millions of both real-time and “on-demand” product demonstration views as evidenced by the popular hashtag “#TikTokMadeMeBuyIt.”

Meanwhile grocery stores and retailers like the multinational Costco and the United Kingdom’s **Hamleys**, have become well known for demonstrating their products live in-store. Demonstrations can boost a product’s sales by as much as 177% on the day of the demonstration (Business Wire 2009), and up to 41% of shoppers who view a product demonstration in-person will go on to buy it from the store (Handley 2014), while 64% of shoppers who view a video demonstration online, may go on to purchase the product (Hall 2013).

On the surface, it makes intuitive sense that product demonstrations are effective in reducing uncertainty, because they allow the customer to have an experience with the product before purchase (Heiman, McWilliams, and Zilberman 2001), which in turn increases diffusion and acceptance (Heiman and Muller 1996; see Table 1 for a review of the product demonstration literature). While prior work has laid the foundation for why some product demonstrations might

be effective from a risk reduction standpoint, we argue that this explanation does not tell the whole story, as it ignores the customer's cognitive experience during the demonstration, as well as their social experience as a member of the demonstration audience. Our research aims to expand our understanding of product demonstrations by investigating how the manner in which information is presented to customers during the demonstration affects their thought processes and resulting actions. Further, we provide empirical evidence that our proposed effects are moderated by the social presence of other customers, which previous work has not considered as a potential influence on product demonstration effectiveness.

Product demonstrations can vary greatly in their presentation type; some of which walk customers through the step-by-step process of using a product until the end result is achieved, while other types of demonstrations focus on the outcome of using a product without showing the intermediary steps involved in achieving that final result. For example, a *process demonstration* showcases each step required to use a flat iron tool to create a smooth, straight hairstyle. Alternatively, an *outcome demonstration* showcases a model's finished hairstyle as the end result achieved by using the flat iron tool. Our research draws on theory in mental simulation (Escalas and Luce 2003, 2004), cognitive flow (Csikszentmihalyi 1990), and narrative transportation (Escalas 2004a, 2004b) to explain how process and outcome-focused product demonstrations affect customers' thought processes, as well as their resulting actions after the demonstration has concluded. We shed light on which demonstration type is the most effective in enhancing purchase intentions for the demonstrated product(s) and identify the underlying cognitive process driving these effects.

In addition, product demonstrations can be deployed across a myriad of retail sales channels, in which the social presence of other customers can be experienced in a variety of

ways. For instance, hosts of live in-person demonstrations might encourage greater social presence by inviting a group of customers to view the demonstration together, or demonstrators might invite customers to privately view the demonstration one on one. Additionally, the social presence of other audience members can be highlighted in “on-demand” video demonstrations by publishing the total number of video views, or alternatively, social presence can be eliminated by hiding the number of video views.

Given these examples from marketing practice, we suggest that a customer’s social experience is an important aspect to consider when examining the effectiveness of product demonstrations. We therefore examine the social presence of other customers as a potential moderator to our proposed effects. This is notable because prior work in product demonstrations has assumed that demonstrations take place for groups of customers (Nordfalt and Lange 2013) yet has not isolated the potential impact of social presence of others on product demonstration effectiveness. Our research examines the effectiveness of product demonstrations – presented to customers by themselves and with a larger group of customers - across both in-person and digital presentation modalities.

INSERT TABLE 1 ABOUT HERE

Our investigation makes several notable theoretical and managerial contributions. The current research broadens our theoretical understanding of product demonstrations by building from theory in mental simulation to explain how and why process-focused demonstrations are more effective in driving purchases than outcome-focused demonstrations. While previous work in consumer psychology and sensory marketing has explored process versus outcome mindsets to explain customer responses to advertisements (Escalas and Luce 2003) and how product sounds can impact customer perceptions (Ringler, Sirianni, and Christenson 2021), ours is the first

research that we are aware of to employ these principles to study the mental processing that customers engage in when viewing product demonstrations. We also contribute to knowledge on cognitive flow states (Csikszentmihalyi 1990), and narrative transportation (Escalas 2004a, 2004b) more generally. We contend that cognitive flow states experienced while viewing a process-focused demonstration ultimately result in increased purchase intentions when narrative transportation becomes activated during the demonstration. Thus, our work contributes an underexplored antecedent link to the growing cognitive flow and narrative transportation literature streams.

Our research reveals key managerial implications regarding product demonstration modality. First, findings suggest that for product demonstrations to be more successful, they must tell a step-by-step story and not just provide the desired outcome achieved after using the demonstrated product. Specifically, results demonstrate that process demonstrations are more effective because audience members become absorbed in the product story via the process of cognitive flow and narrative transportation. Conversely, when viewing outcome demonstrations, customers may not enter the cognitive processing state which allows them to become absorbed in the product story via narrative transportation (Escalas 2004a, 2004b), and therefore action-outcomes are less likely to form (Escalas and Luce 2003, 2004), and the effectiveness of the product demonstration is diminished.

Our work also suggests that demonstrations should take place in a setting without other customers present to be most effective. For example, consider the Apple store employee that walks individual customers through the process of how to use a smartwatch, or consider an “on-demand” video product demonstration that does not publicize the number of previous views, so customers are not aware of the social presence of other audience members. Specifically, we find

that when customers are aware of the presence of other customers while watching a product demonstration, they can become inhibited from reaching optimal cognitive flow states which enable them to experience a loss of awareness of the sense of self as a social actor (Nakamura and Csikszentmihalyi 2009).

Finally, the marketing literature has investigated product demonstrations in the more traditional sense (i.e., in-person demonstrations at a retail store presented to a group of customers; see Table 1), but has not examined the impact of demonstrations that are presented both one-on-one and to larger groups of customers, and hosted via modern digital modalities that offer the potential for scalability (online videos hosted on YouTube, retailer websites, and QVC-style television demonstrations). We provide compelling evidence that screen-based product demonstrations can be as successful as in-person demonstrations. This is noteworthy because during the pandemic, retailers reported fifteen to thirty percent growth in online sales across most categories (Charm et al. 2020), and it has become increasingly important to understand the effectiveness of digital demonstrations as these may become the new standard (see Figure 1 for an overview of our conceptual model). We believe our work represents a conservative test of the effectiveness of product demonstrations as social media interest-matching algorithms may identify product demonstrations that the customer is more likely to be interested in watching.

INSERT FIGURE 1 ABOUT HERE

THEORETICAL BACKGROUND

Product Demonstrations, Mental Simulation, and Cognitive Flow

Often, warehouse retailers will offer food for customers to sample, stationing an employee nearby to answer customer questions. In this case, customers are encouraged to taste the product, but they rarely witness the process that goes into producing the desired outcome

(i.e., the finished product). Based on the theory of mental simulation which describes the cognitive processing involved in creating mental imagery (Escalas and Luce 2004), we refer to this type of product demonstration as an *outcome demonstration* because it encourages the brain to focus on outcomes, or end results. This outcome-focused approach is also popular at department stores like FAO Schwarz, which showcases toy trains running on a track, but not the assembly process associated with reaching that outcome.

In contrast, another common demonstration type is much more process-focused. Consider a technique frequently used at supermarkets, where a trained employee sets up a chef station, proceeds to follow a recipe, and encourages customers to stop and watch to get inspired. The employee walks customers through the entire process, and then directs customers to a table where all the components can be found along with a take-home copy of the recipe. Based on theory in mental simulation (Escalas and Luce 2004), we refer to this type as a *process demonstration* because each step is shown to the customer until the end result is achieved, and thus, it engages the brain in process-focused thinking. Specialty retailers like Bose utilize process demonstrations when employees show each step required to wirelessly pair their headphones or speakers with the customers' existing device.

Prior research provides evidence as to which type of demonstration would be more effective in increasing customers' purchase intentions, as the theory of mental simulation describes the manner in which actions and outcomes become linked in a causal fashion within the customer's mind (Escalas and Luce 2003; Pennington and Hastie 1986). Process-oriented thinking, such as that encouraged during process demonstrations, forges action-outcome links which allow customers to mentally rehearse a narrative for achievement (e.g., "If I engage in actions x and y, then I will achieve outcome z"). For instance, while viewing a process

demonstration in which the demonstrator is following a recipe to create a mixed cocktail, the customer is likely to mentally follow along, engaging in adding ingredient x and y, so that they can achieve the final cocktail z. Alternatively, outcome-oriented thinking, such as that encouraged during outcome demonstrations, allows customers to skip to the end of the story without any details regarding how they arrived there (Escalas and Luce 2004). For instance, while viewing an outcome demonstration in which the demonstrator is showcasing a mixed cocktail, the customer is likely to focus on the end result of enjoying the finished beverage without considering how it was made.

Building on the cognitive activity that takes place during mental simulation, we propose that the step-by-step thinking involved during process demonstrations encourages customers to enter cognitive flow states (Csikszentmihalyi 1990; Nakamura & Csikszentmihalyi 2009), which helps to explain why these types of demonstrations are more effective. Cognitive flow has been described as a state of effortless yet intense and focused concentration, which is intrinsically enjoyable to the individual, as they experience full involvement in the present moment such that they lose their sense of time (Nakamura & Csikszentmihalyi 2009). Individuals experiencing cognitive flow also report positive affect, including feeling attentive, interested, inspired, and engaged (Csikszentmihalyi 1990). Optimal flow states are marked by a focused attention on the task at hand, which can involve clear steps with goals to be achieved and can occur during both leisure and work activities (Csikszentmihalyi and LeFevre 1989). Likewise, process demonstrations involve focused attention to the task at hand, which includes mentally simulating clear steps with goals to be achieved (i.e., such as following the step-by-step recipe to achieve a completed mixed cocktail). Further, we propose that customers are less likely to enter cognitive

flow states when viewing outcome demonstrations, as they are focused on end results only, with little to no cognitive focus or mental absorption.

Given the apparent connections between cognitive flow states and the mental simulation involved during process demonstrations, we propose that customers will experience a cognitive flow state when viewing a process (versus outcome) demonstration, and this will encourage narrative transportation, or immersive absorption into the product story, to take place.

Process Demonstrations and Narrative Transportation

Storytelling is an established and effective tool for allowing the customer to connect with the brand (Roggeveen et al. 2021). Research on narrative transportation has established that customers' connections with a story impact affective responses (Escalas, Moore, and Britton 2004; Holbrook and Batra 1987), cognitive responses (Slater and Rouner 2002), narrative thought (Escalas 2004b), beliefs (Green 2004; Green and Brock 2000), attitudes (Escalas 2004a, 2007), and intentions (Schlosser 2003). A meta-analysis determined that for narrative transportation to occur, the story must include identifiable characters, verisimilitude, and imaginable plot (van Laer et al. 2014). Identifiable characters are those personas the story audience identifies from the narrator's use of context (Stern 1994; van Laer et al. 2014). Verisimilitude deals with the believability within the story (Bal, Butterman, and Bakker 2011; van Laer et al. 2014), and the imaginable plot refers to the temporal sequence of events that happen in the setting (Escalas 1998; van Laer et al. 2014).

We propose the elements of narrative transportation clearly map on to components of both types of product demonstrations (e.g., process and outcome). First, identifiable characters include the storyteller, which is the demonstrator (the frontline employee performing the

demonstration). Identifiable characters include the products featured, with the focal product starring as the story's main character (i.e., a Vitamix blender), and additional products included in the demonstration serving as supporting characters (i.e., the protein powder, almond milk, and fruit used in the blender demonstration). Next, in the case of process and outcome-focused demonstrations, there is likely to be a high degree of verisimilitude across both types, as demonstrations are typically set up to showcase how the product can be realistically utilized by customers. However, the identifiable plot (i.e., temporal sequence) component of narrative transportation is where we would expect there to be some degree of divergence. A process-focused demonstration links the actions and outcomes in a sequence and is likely to generate a greater degree of imaginable plot, and thus a greater degree of narrative transportation as compared to an outcome demonstration that does not generate action-outcome links.

Process Demonstrations and Purchase Intentions

Recall that mental simulation theory indicates that the step-by-step process of engaging in an activity is made salient via process-focused thinking, while the end result is made salient via outcome-focused thinking (Escalas and Luce 2003). The increased salience that occurs via the action-outcome links formed during process-focused (versus outcome-focused) thinking has been shown to lead to greater purchase intentions (Ringler et al. 2021). To illustrate, prior research demonstrates that customers who view an advertisement while engaging in process (versus outcome) simulation are more likely to make plans to purchase the advertised products (Escalas and Luce 2003). Similarly, a process demonstration walks customers through each step of the process associated with using the focal product, while an outcome demonstration only shows the end benefits of using the focal product, so we would expect similar results to follow in

our research. Thus, consistent with the mental simulation literature (Escalas and Luce 2003), we propose that process (versus outcome) demonstrations encourage customers to enter cognitive flow states, which enables them to become fully absorbed in the product story via the process of narrative transportation. This underlying cognitive process explains why purchase intentions for demonstrated product(s) increase after customers view process (versus outcome) demonstrations. We therefore hypothesize the following:

H_{1A}: A process (versus outcome) demonstration will increase customers' experience of cognitive flow.

H_{1B}: A process (versus outcome) demonstration will increase narrative transportation.

H_{1C}: A process (versus outcome) demonstration will increase purchase intentions for the demonstrated product(s), which can include the focal product and any supporting products featured in the demonstration.

H₂: Cognitive flow and narrative transportation mediate the relationship between demonstration type and purchase intentions, such that, a process (versus outcome) demonstration increases cognitive flow, which increases narrative transportation, and results in increased purchase intentions for the product(s) featured in the demonstration.

Social Presence of Other Customers as a Moderating Influence

Product demonstrations can be deployed across a wide array of retail channels, some of which encourage groups of customers to view the demonstration together with the knowledge that others are currently watching (such as in-person groups, television, and live streaming demonstrations). Still other types encourage the awareness that other customers have previously watched the demonstration, such as video demonstrations with many online views. Finally, some demonstrations enable the customer to view the demonstration alone (such as one-on-one in-

person demonstrations and videos with little to no online views). Given these examples from retail practice, we suggest that a customer's social experience is an important aspect to consider when examining the effectiveness of product demonstrations. Building on our earlier theorizing, we predict that when customers experience the presence of others while watching a product demonstration, they can become inhibited from reaching optimal cognitive flow states which enable them to experience a loss of reflective self-consciousness, or a loss of awareness of the sense of self as a social actor (Nakamura and Csikszentmihalyi 2009). Research in social cognition supports this idea and suggests that the mere presence of other people activates social thinking, which can interrupt cognitive processing and leads to self-presentation responses, such as audience pleasing behaviors (Baumeister and Hutton 1987).

As such, we predict that customers who view process demonstrations in the presence of other customers (either by viewing the demonstration in a group or on television or by viewing a posted online demonstration video with many views), are more likely to become distracted from entering into the fully immersed cognitive processing state which allows them to achieve optimal cognitive flow (Csikszentmihalyi 1990) and become absorbed in the product story via narrative transportation (Escalas 2004a, 2004b). Thus, we predict that cognitive action-outcomes are less likely to form (Escalas and Luce 2003, 2004), customers are less likely to make plans to purchase the demonstrated product(s), and the effectiveness of the product demonstration is diminished. Moreover, research has established that individuals who are alone (such as when viewing a process demonstration individually or by viewing an online demonstration video with

little to no views), experience greater narrative transportation (van Laer, Feiereisen, and Visconti 2019) so this lends further support to our prediction.

Hence, we anticipate that when customers view a process demonstration in the presence of other customers, the effects on purchase intentions should be attenuated as the underlying process of cognitive flow and subsequent narrative transportation are less likely to be experienced. Therefore, we hypothesize:

H_{3A}: When customers view a process demonstration in the presence of other customers (versus viewing a process demonstration without the presence of others), the impact on purchase intentions will be attenuated.

H_{3B}: When customers view a process demonstration in the presence of other customers (versus viewing a process demonstration without the presence of others), they will be less likely to experience narrative transportation, and therefore, the impact on purchase intentions will be attenuated.

H_{3C}: When customers view a process demonstration in the presence of other customers (versus viewing a process demonstration without the presence of others), they will be less likely to experience cognitive flow and narrative transportation, and therefore, the impact on purchase intentions will be attenuated.

OVERVIEW OF STUDIES

The purpose of this research is to identify how and why process and outcome-focused product demonstrations drive customer purchase intentions, and to understand how the social presence of other customers during the demonstration (viewing individually versus viewing with other customers) can enhance or attenuate these effects (see Table 2 for an overview and key

findings of our studies). Past research has defined product demonstrations in broad terms, including any means by which a firm entices customers to learn about a new product (i.e., via samples, trials, online review platforms; Boleslavsky, Cotton, and Gurnani 2017). For our research purposes, a product demonstration is defined as watching a frontline employee show customers how a product works. Since retail practice has shown that product demonstrations lead to increased purchasing, we consider a product demonstration to be effective when it results in customers' increased purchase intentions for the product(s) featured in the demonstration. Moreover, in an attempt to capture the potentially wider downstream effects of product demonstrations, and in line with research suggesting products should be displayed with collections or complementary products (Roggeveen et al. 2021; i.e., a product bundle), we also measure purchase intentions for all products utilized in the demonstration.

We test our predictions across a series of five studies. Study 1 examines the impact of process and outcome-focused product demonstrations on the customer's experience of cognitive flow (H_{1A}) and provides insight into the customer's mental and emotional states during both types of demonstrations. Study 2 examines how demonstration type affects the customer's experience of narrative transportation (H_{1B}), their purchase intentions (H_{1C}), and partially tests the underlying process which explains these effects (H_2). Studies 3 and 4 test the social presence of other customers during the demonstration as a potential moderator of our proposed effects, as we examine process and outcome-focused demonstrations as viewed individually versus in a group (H_{3A-B}). Studies 3 and 4 also investigate whether the main effects extend beyond the focal demonstrated product to positively impact purchase intentions for a group of complementary products (i.e., a product bundle). Finally, study 5 tests the full serial mediation model (H_2) as well as the full moderated serial mediation model (H_{3C}), in which demonstration type impacts the

customer's cognitive flow state, which facilitates their experience of narrative transportation, which then results in greater purchase intentions for the demonstrated product(s), but only when the customer views the demonstration without the social presence of other audience members.

Further, we test the robustness of our predictions across different demonstration modalities including: online product demonstration videos like those hosted on retailers' websites (study 1), in-person product demonstrations like those that can occur in-store (study 2), QVC-style televised product demonstrations (studies 3-4), and online YouTube product demonstration videos (study 5). Additionally, across these studies, the potential alternative explanations of psychological reactance, reciprocity, and experiential vividness are examined and ruled out.

INSERT TABLE 2 ABOUT HERE

STUDY 1: DEMONSTRATION TYPE AND COGNITIVE FLOW

Study 1, which was conducted in March 2022, is designed to test H_{1A} , which predicts that a process (versus outcome) demonstration will increase cognitive flow. One hundred and twenty participants ($M_{age} = 20.15$, 63% male) completed a one-way (demonstration type: process versus outcome) between-subjects design at a large North American university for course credit.

Procedure

Participants were asked to view a video on a company's website, which featured a promotion from a beverage brand, and then answer some questions. The video opened with the message that a brand of vodka and a brand of kitchenware (focal brands) had teamed up to show customers how to make one of their favorite cocktails. In the process demonstration condition,

the demonstrator used all the ingredients to assemble the martini and listed each step as it was performed. This took 3 minutes and 6 seconds to complete. In the outcome demonstration condition, the final product and all ingredients were visible, and the demonstrator pointed to each ingredient as the step was listed. This took 1 minute and 50 seconds to complete.

Following the video, participants were asked to indicate how they were currently feeling using the PANAS scale (Watson, Clark, and Tellegan 1988; 1 = very slightly or not at all; 5 = extremely). Cognitive flow states have been shown to be associated with experiencing positive affect, such as feeling attentive, interested, and inspired (Csikszentmihalyi 1990). Measurements regarding these affective states are captured in the PANAS scale (along with other types of positive affect) and should be higher if study participants experience cognitive flow states during process-oriented product demonstrations, thus lending support to H_{1A} (see appendix for full measures for all studies). The ten positive affect items were combined to form an index of positive affect ($\alpha = .91$) and the ten negative affect items were combined to form an index of negative affect ($\alpha = .89$).

Next, we measured our proposed dependent variable, cognitive flow, using a 10-item scale (1 = strongly disagree; 7 = strongly agree; adapted from Jackson and Marsh 1996) including items such as: “It was no effort to keep my mind on what was happening,” and “I was completely focused on the task at hand.” These items were averaged to form a cognitive flow index ($\alpha = .98$).

Then, because the length of the product demonstrations naturally varied as the process demonstration acted out each step and thus resulted in a longer demonstration, we asked participants to indicate the extent to which they felt the product demonstration was: about right, too long, and too short (1 = strongly disagree; 7 = strongly agree). Because individuals

experiencing cognitive flow report a distortion of temporal experience or losing their sense of time (Nakamura & Csikszentmihalyi 2009), we suggest that participants will not mind the time spent viewing process demonstrations, even when process (versus outcome) demonstrations are significantly longer in duration. Thus, if study participants experience cognitive flow states during process-oriented product demonstrations, a perception of time measure should support this, and results will lend support to H_{1A}. Lastly, participants indicated their age and gender.

Results and Discussion

Cognitive flow. As predicted in H_{1A}, results from a one-way ANOVA on cognitive flow indicated a significant main effect ($F(1, 118) = 9.06, p = .003, d = .55$). Participants in the process demonstration ($M = 4.14$) indicated greater cognitive flow than participants in the outcome demonstration ($M = 3.30$; in support of H_{1A}).

Affect. We then tested whether demonstration type impacts affect. A one-way ANOVA on positive affect indicated a significant main effect ($F(1, 118) = 8.09, p = .005, d = .52$). Participants in the process demonstration ($M = 2.57$) indicated greater positive affect than participants in the outcome demonstration ($M = 2.12$). A one-way ANOVA on negative affect indicated a non-significant main effect ($F < 1$). This lends further support to the cognitive flow states experienced during process demonstrations and lends support to H_{1A}.

Perceptions of time. Lastly, we examined whether participants felt the demonstrations were just about the right length of time, too long, or too short. A one-way ANOVA on all three time perceptions indicated non-significant main effects of demonstration type (F 's < 1). Thus, we conclude that study participants did not mind the extra time spent during process

demonstrations, as compared to outcome demonstrations. This lends further support to the cognitive flow state predicted during process demonstrations and predicted by H_{1A}.

Discussion. In support of H_{1A}, we find that when participants viewed a process (versus outcome) demonstration, this resulted in an increase in cognitive flow. In addition, the longer duration of the process demonstration did not result in negative affect or perceptions that the product demonstration took too much time to complete. In fact, process demonstrations showed greater levels of positive affect and no difference in perceptions of time spent in comparison to outcome demonstrations. These findings lend support to our prediction that process demonstrations encourage customers to enter cognitive flow states which are marked by positive feelings of engagement, attentiveness, and interest coupled with temporal distortion, commonly known as “losing track of time.”

STUDY 2: DEMONSTRATION TYPE AND NARRATIVE

TRANSPORTATION

Study 2, which was conducted in March 2020, is designed to test whether customers who view a process (versus outcome) demonstration experience greater narrative transportation (H_{1B}) and purchase intentions (H_{1C}). One hundred and fifty-nine participants ($M_{age} = 20.52$, 47% male) completed a one-way (demonstration type: process versus outcome) between-subjects design at a large North American university for course credit.

Procedure

Individually, participants met with a lab assistant in a small room to complete an in-person electronics product demonstration where they were randomly assigned to the process or

outcome condition. Condition was rotated every hour. All participants were told: “The electronics company is interested in college students’ opinions of their products. In this part of the study, you will pair the wireless speaker with the iPad to enable the Bluetooth connection. Afterward, you will be asked to answer some questions about the speaker.” In the process demonstration, the lab assistant walked participants step-by-step through how to pair the Bluetooth speaker with the iPad to play music, acting out each instruction as it was stated, and then played a song to illustrate the pairing was successful. This took approximately 45 seconds to complete. In the outcome demonstration, the speaker was already paired to the iPad, and the lab assistant simply listed each step needed to reach the outcome and then played a song to illustrate the pairing was successful. This took approximately 20 seconds to complete.

Immediately following the demonstration, participants returned to the computer lab and indicated their purchase intention (1 = not at all likely to purchase; 7 = very likely to purchase) for the focal product. We then measured narrative transportation using a 6-item scale (1 = strongly disagree; 7 = strongly agree; adapted from Green and Brock 2000) including items such as: “While I was taking part in the product demonstration, I could easily picture the events in it taking place,” and “I was emotionally involved while taking part in the product demonstration.” These items were averaged to form a narrative transportation index ($\alpha = .88$). Lastly, participants indicated their age and gender.

Results and Discussion

Narrative transportation. As predicted in H_{1B} , results from a one-way ANOVA on narrative transportation indicated a significant main effect ($F(1, 157) = 4.53, p = .03, d = .34$).

Participants in the process demonstration ($M = 4.93$) indicated greater narrative transportation than participants in the outcome demonstration ($M = 4.49$; in support of H_{1B}).

Purchase intention. Results from a one-way ANOVA on purchase intentions for the focal product indicated a significant main effect ($F(1, 157) = 5.89, p = .02, d = .39$). Participants that viewed the process demonstration ($M = 5.29$) were more likely to purchase the focal product than those that viewed the outcome demonstration ($M = 4.66$; in support of H_{1C}).

Mediation. In a partial test of H_2 , we use PROCESS model 4 (Hayes 2018). Demonstration type was our independent variable and the outcome demonstration served as our baseline (comparison) condition. Purchase intentions was our dependent variable and narrative transportation was our mediator. We find a significant indirect effect for the contrast between the process and outcome demonstration (95% CI [.0140, .5017]; see Table 3). Specifically, viewing the process demonstration increased narrative transportation, which resulted in an increase in purchase intentions, in partial support of H_2 (see study 5 for a full test of H_2).

INSERT TABLE 3 ABOUT HERE

Discussion. In support of H_{1B} and H_{1C} , and in partial support of H_2 , we find that when participants viewed a process (versus outcome) demonstration, this resulted in an increase in narrative transportation (H_{1B}), and increase in purchase intentions (H_{1C}), with narrative transportation mediating the relationship between demonstration type and purchase intentions.

STUDY 3: THE IMPACT OF DEMONSTRATION TYPE AND SOCIAL PRESENCE ON PURCHASE INTENTIONS FOR PRODUCT BUNDLES

The purpose of study 3, which was conducted in October 2019, is to test the interaction between demonstration type and social presence, as demonstrations in retail settings typically

invite multiple customers to view the demonstration together, as members of the demonstration audience (H_{3A}). We also extend our dependent variable from a single product as tested in previous studies to include purchase intentions for a bundle of demonstrated products (a product cast of supporting characters). This approach was undertaken as research suggests that “retailers should leverage the ability to display products with collections or complementary products” (Roggeveen et al. 2021, p. 88). Finally, we examine psychological reactance as an alternative explanation for our results. Research has shown that a product demonstration led by an employee could be categorized as a type of haptic blocking, as the customer is not able to touch the product during the demonstration. The inability to touch products when desired has been shown to lead to greater levels of psychological reactance which can impact purchase intentions. (Ringler et al. 2019). We therefore test psychological reactance as an alternative explanation of our effects. Seven hundred and forty-one participants ($M_{age} = 20.45$, 51% male) completed a 2 (demonstration type: process versus outcome) x 2 (social presence: individual versus group) between-subjects design at a large North American university for course credit.

Procedure

At the beginning of the study, participants entered a room in the university’s behavioral lab which featured a large screen television. They watched a brief infomercial similar to what customers might see on QVC, which featured a focal branded food product. After viewing the video, participants were escorted back to the computer lab to respond to survey questions. The group presence condition and individual condition were alternated every hour, with the condition the next day following the last condition on the previous day. Study participants were randomly assigned to conditions based on their lab session registration. In the group condition, at least six,

but no more than twelve participants visited another room where they watched the televised video together. In the individual condition, participants visited the room and viewed the video by themselves. The demonstration type manipulation was assigned by lab session in the same manner as the group manipulation. In the process demonstration condition, the video demonstrator walked participants through step-by-step how to make an appetizer using the focal branded product and several other featured but unbranded products (which together form a product bundle), acting out each instruction as it was listed. This took 2 minutes and 19 seconds to complete. In the outcome demonstration condition, the appetizer was already made when the video started, and the demonstrator simply listed each step needed to reach the outcome seen. This took 1 minute and 38 seconds to complete.

Following the video, participants returned to the computer lab and were asked to answer a question regarding their purchase intentions for the focal product, and for the bundle of products, or product cast of supporting characters, needed to make the appetizer (the focal brand of cream cheese, sour cream, mayonnaise, green onions, bacon, and shredded cheddar; 1 = not at all likely to purchase; 7 = very likely to purchase). Participants were then offered the option to click on a link that would take them to the recipe featured in the video demonstration, and number of “click throughs” was recorded, as was the amount of time participants spent viewing the recipe page (see the web appendix for these results). We then measured psychological reactance, a potential alternative explanation, using a fourteen-item scale (1 = strongly disagree; 7 = strongly agree; Ringler et al. 2019; see appendix), that was averaged to form an index of psychological reactance ($\alpha = .91$).

Results and Discussion

Purchase intention. A demonstration type by social presence two-way ANOVA on purchase intention for the focal product was conducted. Results indicated a non-significant main effect of demonstration type ($F(1, 737) = 2.18, p = .14$) and a non-significant main effect of social presence ($F(1, 737) = 2.45, p = .12$). However, this should be interpreted in light of a significant interaction ($F(1, 737) = 5.31, p = .02$).

In support of H_{3A} , post hoc tests indicate that when participants viewed the process demonstration individually, they were more likely to purchase the focal product ($M = 4.87$) than when they viewed the demonstration in the group condition ($M = 4.25; F(1, 737) = 7.17, p = .008, d = .28$). In the outcome demonstration, the difference between watching the video individually ($M = 4.27$) versus with a group ($M = 4.39$), was not significant ($F < 1$).

We then tested for purchase intention on the entire bundle of products utilized in the demonstration. A demonstration type by social presence two-way ANOVA on purchase intention for the bundle of products indicated a significant main effect of demonstration type ($F(1, 737) = 27.15, p < .0001, d = .38$), such that participants that viewed the process demonstration ($M = 4.29$) were more likely to purchase the bundle of products than participants that viewed the outcome demonstration ($M = 3.58$). Additionally, there was a main effect of social presence ($F(1, 737) = 8.58, p = .004, d = .21$) such that those in the individual condition were more likely to purchase ($M = 4.13$) the bundle of products than those in the group condition ($M = 3.73$). This should be interpreted in light of a significant interaction ($F(1, 737) = 6.10, p = .01$).

In support of H_{3A} , post hoc tests indicate that when participants viewed the process demonstration individually, they were more likely to purchase the bundle of products ($M = 4.66$) than when they viewed the demonstration in the group condition ($M = 3.92; F(1, 737) = 13.96, p$

= .0002, $d = .39$). In the outcome demonstration, the difference between watching the video individually ($M = 3.61$) versus with a group ($M = 3.55$), was not significant ($F < 1$).

Reactance. To determine whether blocking participants from touching products increased feelings of psychological reactance, we ran a two-way ANOVA. There were no significant main effects of demonstration type ($F(1, 737) = 2.25, p = .13$) or social presence ($F < 1$).

Additionally, the interaction between the two variables was not significant ($F(1, 737) = 1.29, p = .26$). However, as reactance has been shown to be closely tied to our dependent variable, we ran a simple mediation model (model 4; Hayes 2018) with demonstration type as the independent variable, psychological reactance as the mediator, and purchase intent as the dependent variable. Results revealed a non-significant indirect effect (95% CI [-.0586, .0298]), allowing us to rule out psychological reactance as a process which might have contributed to our effects.

Discussion. Overall, we find that when participants viewed a process (versus outcome) demonstration, this resulted in an increase in purchase intentions for the bundle of products demonstrated, but only when watching the demonstration as an individual audience member (H_{3A}), in other words, when there was a lack of social presence of other customers.

STUDY 4: THE IMPACT OF SOCIAL PRESENCE AND DEMONSTRATION TYPE ON NARRATIVE TRANSPORTATION AND PURCHASE INTENT

The purpose of study 4, which was conducted in October 2020, is to test whether narrative transportation mediates the interactive relationship between demonstration type and social presence on purchase intentions (moderated mediation; H_{3B}). One hundred and twenty-three participants ($M_{age} = 20.41$, 72% male) completed a 2 (demonstration type: process versus

outcome) x 2 (social presence: individual versus group) between-subjects design at a large North American university for course credit.

Procedure

At the beginning of the study, participants entered a room in the university's behavioral lab which featured a large screen television. Participants followed the same procedure as in study 3 and watched the same QVC-style infomercial. After viewing the video, participants were escorted back to the computer lab to respond to survey questions. The group and individual condition were alternated every hour, with the condition the next day following the last condition on the previous day. In the group condition, at least four, but no more than six participants visited a room where they watched the televised video together. In the individual condition, participants visited the room and viewed the video by themselves. In all conditions, study participants were randomly assigned based on their lab session registration. In the process demonstration, the demonstrator walked participants through step-by-step how to make an appetizer using the focal branded product and several other featured but unbranded products, acting out each instruction as it was listed. This took 2 minutes and 19 seconds to complete. In the outcome demonstration, the appetizer was already made when the video started, and the demonstrator simply listed each step needed to reach the outcome seen. This took 1 minute and 38 seconds to complete.

Following the video, participants returned to the computer lab and were asked to answer a question regarding their purchase intentions for the bundle of products, or product cast of supporting characters, needed to make the appetizer (the focal brand of cream cheese, sour cream, mayonnaise, green onions, bacon, and shredded cheddar; 1 = not at all likely to purchase;

7 = very likely to purchase). We then measured narrative transportation ($\alpha = .71$), age, and gender as in the previous studies.

Results and Discussion

Purchase intention. To replicate the results of study 3 and to retest H_{3A}, a demonstration type by social presence two-way ANOVA on purchase intention for the bundle of products was conducted. Consistent with our previous studies, results indicated a significant main effect of demonstration type ($F(1, 119) = 10.81, p = .001, d = .54$), such that participants that viewed the process demonstration ($M = 4.83$) were more likely to purchase the bundle of products than participants that viewed the outcome demonstration ($M = 3.89$). Additionally, there was a main effect of social presence ($F(1, 119) = 20.61, p < .0001, d = .75$) such that those in the individual condition were more likely to purchase ($M = 5.01$) the bundle of products than those in the group condition ($M = 3.71$). This should be interpreted in light of a significant interaction ($F(1, 119) = 4.94, p = .03$).

In support of H_{3A}, post hoc tests indicate that when participants viewed the process demonstration individually, they were more likely to purchase the bundle of products ($M = 5.81$) than when they viewed the demonstration in the group condition ($M = 3.86; F(1, 119) = 22.53, p < .0001, d = 1.25$). In the outcome demonstration, the difference between viewing the video individually ($M = 4.22$) versus with a group ($M = 3.56$), was not significant ($F(1, 119) = 2.73, p = .10$).

Narrative transportation. Next, a demonstration type by social presence two-way ANOVA on narrative transportation was conducted. Results indicated a significant main effect of demonstration type ($F(1, 119) = 16.42, p < .0001, d = .66$), such that participants that viewed

the process demonstration ($M = 4.77$) experienced greater narrative transportation than participants that viewed the outcome demonstration ($M = 4.16$). Additionally, there was a main effect of social presence ($F(1, 119) = 21.81, p < .0001, d = .72$) such that those in the individual condition ($M = 4.82$) experienced greater narrative transportation than those in the group condition ($M = 4.12$). This should be interpreted in light of a significant interaction ($F(1, 119) = 11.52, p = .001$).

Post hoc tests indicate that when participants viewed the process demonstration individually, they experienced more narrative transportation ($M = 5.38$) than when they viewed the demonstration in the group condition ($M = 4.17; F(1, 119) = 32.04, p < .0001, d = 1.51$). In the outcome demonstration, the difference between watching the video individually ($M = 4.26$) versus with a group ($M = 4.07$), was not significant ($F < 1$).

Moderated mediation. To test H_{3B} , we used PROCESS model 8 (Hayes 2018). Demonstration type was our independent variable and the outcome demonstration served as our baseline (comparison) condition. Social presence was our moderating variable. Purchase intention for the package of products was our dependent variable, narrative transportation was our mediator. We find a significant index of moderated mediation (95% CI [-2.1204, -.5214]). When participants viewed a process demonstration individually, this led to greater narrative transportation and resulted in greater purchase intent (95% CI [.9136, 2.0048]; see Table 3). When participants were in a group, demonstration type did not impact purchase intentions via narrative transportation (95% CI [-.4775, .7488]).

Discussion. Overall, we find that when participants viewed a process (versus outcome) demonstration, this resulted in an increase in purchase intentions for the bundle of products

demonstrated via narrative transportation, but only when watching the demonstration as an individual audience member, without the social presence of other customers.

STUDY 5: SERIAL MEDIATION WITH SOCIAL PRESENCE AS NUMBER OF VIDEO VIEWS

Study 5, which was conducted in April 2022, tests whether the interactive effect between demonstration type and social presence will increase cognitive flow, leading to an increase in narrative transportation, and resulting in customers being more likely to purchase the focal product (H_{3C}). Four hundred participants ($M_{age} = 36.27$, 69% male) completed a 2 (demonstration type: process versus outcome) x 2 (social presence: zero views versus many views) between-subjects design on Amazon's Mechanical Turk for a monetary payment.

Procedure

Participants were asked to view a video on a company's website, which featured a promotion from a beverage brand, and then answer some questions. This video played "on-demand" and was not a live streaming demonstration. They began by listening to a test sound that ensured the audio on their computer was working correctly. If the participant answered the test sound incorrectly, they were exited from the survey. Then, on the next page, the video opened with the message that a brand of vodka and a brand of kitchenware (focal brands) had teamed up to show customers how to make one of their favorite cocktails, the lime drop martini. In the process demonstration condition, the demonstrator used all the ingredients to assemble the martini and listed each step as it was performed. This took 3 minutes and 6 seconds to complete. In the outcome demonstration condition, the final product and all ingredients were visible, and

the demonstrator pointed to each ingredient as the step was listed. This took 1 minute and 50 seconds to complete.

As the number of views are typically shown for videos on social media sites such as YouTube and Instagram, the social presence manipulation was conducted via the number of views the video had received. In the zero views condition, the video had received zero views and acts as our individual condition given that there is no evidence of social presence of other customers. In the many views condition, the video had received 2,091 views and acts as our group condition, given there is evidence of social presence of other customers.

Following the video, participants were asked to indicate how likely they would be to purchase each focal product (vodka and a citrus squeezer; 1 = not at all likely to purchase; 7 = very likely to purchase). These two items were combined to form the purchase intentions for the focal products ($r = .85$). Participants then completed the same cognitive flow scale used in study 1 ($\alpha = .95$) and the same narrative transportation scale used in study 2 ($\alpha = .81$).

Next, we measured two potential alternative explanations. First, we utilized a three-item scale to measure reciprocity (1 = strongly disagree; 7 = strongly agree; adapted from Palmatier et al. 2009). Reciprocity is included as a potential alternative explanation as a customer may feel the need to reciprocate by purchasing items after the salesperson spends more time with them and provides more detail about how the product works via a process demonstration. These items were averaged to form a reciprocity index ($\alpha = .92$).

Second, we measured experiential vividness using a four-item scale (1 = strongly disagree; 7 = strongly agree; adapted from Peck, Barger, and Webb 2013). Past research has shown that the effects of imagery are impacted by the vividness of that imagery and the more vivid the imagery, the greater the purchase intention of the product (Peck et al. 2013). It is

possible that the process demonstration, which lists each step, allows the viewer to imagine the process more vividly which could result in greater cognitive flow, narrative transportation, and ultimately impact purchase intentions. Therefore, these four items were combined to form a vividness index ($\alpha = .85$). Lastly, participants indicated their age and gender.

Results and Discussion

Serial Mediation. In a full test of H_2 that predicted a process (versus outcome) demonstration leads to greater cognitive flow, which increases narrative transportation, and results in an increase in purchase intentions, model 6 (Hayes 2018) was conducted. Demonstration type was the independent variable, cognitive flow was the first mediator, narrative transportation was the second mediator, and purchase intention was the dependent variable. In support of H_2 , results revealed a significant index of serial mediation (95% CI[.0097, .2498]). Then, in an attempt to provide further support for the proposed process, the order of the mediators was switched, and the model was rerun. When we tested whether demonstration type increased narrative transportation, which increased cognitive flow and purchase intentions, the index of serial mediation was not significant (95% CI[-.0020, .2709]), and this provided additional support for our hypothesized process.

Purchase intention. To retest H_{3A} , a demonstration type by social presence two-way ANOVA on purchase intention for the focal products was conducted. Consistent with our previous studies, results indicated a significant main effect of demonstration type ($F(1, 396) = 4.56, p = .03, d = .21$), such that participants that viewed the process demonstration ($M = 5.03$) were more likely to purchase the products than participants that viewed the outcome demonstration ($M = 4.68$). Additionally, there was a main effect of social presence ($F(1, 396) =$

6.60, $p = .01$, $d = .25$) such that those in the zero views condition were more likely to purchase ($M = 5.06$) the bundle of products than those in the many views condition ($M = 4.65$). This should be interpreted in light of a significant interaction ($F(1, 396) = 3.89$, $p = .05$).

In support of H_{3A} , post hoc tests indicate that when participants viewed the process demonstration that had zero views, they were more likely to purchase the bundle of products ($M = 5.40$) than when they viewed the demonstration with many views ($M = 4.66$; $F(1, 396) = 10.42$, $p = .001$, $d = .51$). In the outcome demonstration, the difference between viewing the video with zero views ($M = 4.73$) versus many views ($M = 4.63$), was not significant ($F < 1$).

Serial moderated mediation. To test the full moderated serial mediation model (H_{3C}), we used PROCESS model 85 (Hayes 2018). Demonstration type was our independent variable and the outcome demonstration served as our baseline (comparison) condition. Social presence was our moderating variable. Purchase intention for the products was our dependent variable, cognitive flow was our first mediator, and narrative transportation was our second mediator. We find a significant index of moderated mediation (95% CI [.0069, .5362]). When participants viewed a process demonstration with zero views, this led to greater cognitive flow, which increases narrative transportation and resulted in greater purchase intent (95% CI [.0949, .4483]; see Table 3 and in support of H_{3C}). When participants viewed a demonstration with many views, demonstration type did not serially impact purchase intentions (95% CI [-.1903, .1994]).

Reciprocity. There was a non-significant main effect of demonstration type ($F(1, 396) = 1.54$, $p = .22$), social presence ($F < 1$), and their interaction ($F < 1$) on reciprocity indicating that the more in-depth and lengthier process demonstration done with zero views or with many views does not appear to impact the extent to which the customer feels reciprocity towards the demonstrator and therefore is unlikely to explain our results.

Experiential vividness. Lastly, there was a non-significant main effect of demonstration type ($F(1, 396) = 1.67, p = .20$), social presence ($F < 1$), and their interaction ($F < 1$) on experiential vividness indicating that the more in-depth and lengthier process demonstration done with zero views or with many views does not appear to impact the extent to which the customer experiences greater vividness of imagery and is unlikely to explain our results.

Discussion. Overall, we find that when participants viewed a process (versus outcome) demonstration, this resulted in an increase in purchase intentions for the focal products demonstrated via experiencing greater cognitive flow and narrative transportation, but only when watching a demonstration with zero views (versus many views). These findings support H_{3C}, and demonstrate that social presence of other customers can extend from in-person presence of others to include the trace evidence of other customers in the form of their prior video views.

However, as inferences of social presence via views was not tested in the main study, a posttest was conducted ($N = 143$, 41% male, $M_{\text{age}} = 20.14$) to ensure that social presence was successfully manipulated via the number of views the video received and the extent to which the number of views, the number of comments, and the number of likes when watching videos online allowed participants to detect the presence of others (1 = not at all; 7 = very much).

A one way ANOVA of social presence on how many people viewed the video was significant ($F(1, 141) = 5.69, p = .02$). Results indicate that in the social presence condition, participants indicated there were significantly more people who had watched the video ($M = 5.06$) than in the no social presence condition ($M = 4.33$).

Then, to determine how social presence is experienced online, we ran a series of paired sample t-tests to test the relationships between the number of views, comments, and likes. Results indicate that participants detected the social presence of others more via the number of

views ($M = 5.05$) than via the number of comments ($M = 4.20$; $t(142) = 5.58, p < .001$) or via the number of likes ($M = 4.31$; $t(142) = 4.65, p < .001$). Based on the results of our posttest, we conclude that social presence via online videos is likely to be experienced via the number of video views.

GENERAL DISCUSSION

Product demonstrations are used to increase sales by many leading companies across multiple sales modalities (i.e., online, in-person, and televised). The current research examines process (versus outcome) product demonstrations across modern modalities that may become the new norm for both shopping and sharing product information. Specifically, we show that when a product demonstrator acts out each step that must be undertaken in the use of a product, this leads to an increase in cognitive flow and narrative transportation, which can increase purchase intentions for the focal product or bundle of featured products. However, this only occurs when the demonstration is conducted with no social presence of other customers (versus demonstrations in which other customers are present) and is a consequence of a greater cognitive flow state. When customers view demonstrations with no social presence of others, they are more likely to achieve optimal cognitive flow states which enable them to experience a loss of reflective self-consciousness, (Nakamura and Csikszentmihalyi 2009). However, when other customers are present as audience members, an optimal cognitive flow state is difficult to achieve, as the mere social presence of others works as a reminder that the individual is a social actor and needs to consider others in their behavior. The following are the key takeaways from each study: (1) Study 1 established that a process (versus an outcome demonstration), led to a cognitive flow state that allows customers become absorbed into the story. (2) Study 2 provided

evidence that a process (versus outcome) demonstration increases purchase intentions due to narrative transportation. (3) Studies 3-4 provided evidence that this effect is attenuated by social presence of others. Specifically, only when participants viewed the demonstration individually or with the demonstrator (no social presence of other customers) did this result in an increase in purchase intentions for the focal product(s). (4) Study 5 provided support for our full serially-mediated process. In short, process demonstrations lead to greater cognitive flow, which encourages greater narrative transportation and increases in purchase intentions, but effects were attenuated when the product demonstration was in the social presence of other customers.

Theoretical Contributions

Our research offers several theoretical contributions to the marketing literature. First, despite a growing body of literature which indicates the positive effects of using product demonstrations (Boleslavsky et al. 2017; Ert, Raz, and Heiman 2016; Heiman and Muller 1996; Heiman and Ofir 2010; Kumar, Choi, and Greene 2017; Scott 1976), scholars have not yet focused on uncovering the social process which contributes to these effects. Our research begins to remedy this gap by investigating how the social presence of other audience members during product demonstrations affects customers' cognitive flow, narrative transportation, and purchase intentions. In addition, we contribute to the product demonstrations literature by establishing an underlying process driving the positive outcomes seen by many retailers and manufacturers. Specifically, we show that a process demonstration, which walks the customer through each step of using the product, is necessary to trigger cognitive flow and narrative transportation which ultimately leads to an increase in purchase intentions.

Second, by highlighting the role of narrative transportation in customer responses to process demonstrations, we contribute a more nuanced understanding of narrative transportation in the consumer behavior arena and its impact on consumption behaviors (Escalas 2004a, 2007; van Laer et al. 2019). In our research, experiencing a process demonstration heightens cognitive flow, which increases narrative transportation. Therefore, we also contribute to knowledge on cognitive flow and narrative transportation more generally, contending that the cognitive flow of a process demonstration is what leads customers to experience greater narrative transportation and increased purchase intentions. Thus, our work contributes an antecedent link in the narrative transportation literature that has been underexplored.

Managerial Contributions

Replicating and extending prior work, we find that process demonstrations (versus outcome demonstrations) lead to greater purchase intentions, which holds several actionable implications for marketers. Perhaps the most direct is that if a retailer or manufacturer wants to realize an increase in sales, they should conduct product demonstrations via a process method whereby a demonstrator walks customers through each step of using the product, but perhaps counterintuitively, these demonstrations need to be conducted without an additional social presence of other customers, or audience members.

Next, as the retail landscape continues to evolve, it is important for retailers to find innovative ways in which customers can connect with salespeople and brands. There are some promising retail contexts where this research can be applied. The first one is known as a store within a store concept where retailers set aside floor space for partner brands to set up shop. These shop-in-shops (SIPS) are set up in confined areas for small group tutorials, product

demonstrations, roundtable discussions, or product sampling campaigns (Owens 2021). Another example are the pop-up stores that are temporary for promotion purposes. These temporary stores are designed to create an event that generates buzz and excitement and are designed using smaller formats to help customers become familiar with a product. SIPS and pop-up stores contain both process and outcome-based demonstrations. Our results suggest that retailers offering these novel shopping experiences should consider adding one-on-one process demonstrations to these store spaces to fully maximize their impact whenever possible. Please note that we have not specifically examined these contexts.

Because effects hold across multiple sales modalities, our research provides marketers with several avenues that can be explored and are substantially less expensive than hosting employee led in-person product demonstrations in store. Study 5 took place via an online platform where the expense to create the online process demonstration video is fairly minimal when compared with the cost of hosting an in-person demonstration and is likely to reach a much larger audience. Additionally, studies 3 and 4 took place via a QVC style television segment, where again, we observed higher purchase intentions and the ability to reach a much larger audience. Moreover, our work provides a conservative test of the effectiveness of process demonstrations, as we demonstrated various products to study participants regardless of their initial interest in those products or their product categories. Alternatively, consider an online setting where social media interest-matching algorithms run to ensure the customer is provided with relevant content. Such personally-driven, algorithm-enabled content should increase the likelihood that customers will watch product demonstrations, because the focal product is of particular interest to them. This is especially noteworthy because the online sales channel is expected to become even more important in the future (Charm et al. 2020).

Finally, we found that process demonstrations are successful because they trigger cognitive flow and narrative transportation. Thus, for managers to fully maximize this effect, it is important that process demonstrations take place one-on-one. When in a group setting, narrative transportation is diminished due to the lower cognitive flow that results from the presence of other social actors, thus the effect of process demonstrations on purchase intent is attenuated. Therefore, we suggest that demonstrations may be more successful if conducted via other modalities where customers are likely to watch them with no social presence, such as areas in a store designed for this purpose (shop-in-shop), or via websites where the number of views are not published for viewers to observe. Given that customers anticipate continuing to shop online after the pandemic, finding ways to successfully demonstrate products, and convert those demonstrations into sales, is important.

Limitations and Future Research

Although our research provides substantial evidence to our understanding of when and why some product demonstrations are most successful, we recognize several limitations that must be considered. First, all our studies collected measures regarding behavioral intentions to purchase and did not collect an objective measure for actual purchase behavior. Although the existing implication from practice indicates rather strong evidence that product demonstrations do lead to an increase in sales, future research should conduct a field study which allows different types of product demonstrations to be viewed and tracks actual customer purchase behavior by demonstration type. Next, while we attempted to design our process and outcome demonstration manipulations to be as comparable as possible to ensure that only the demonstration type was being manipulated, we were not able to control for the length of the

demonstration. Because process demonstrations naturally take longer than outcome demonstrations due to the step-by-step process they employ, it is possible that the length of the demonstration plays a role in our effects.

Additionally, as little research has explored the relationship between cognitive flow states and narrative transportation, future research should uncover additional antecedents and consequences of this particular relationship. Perhaps this can provide some insight into why “unpacking” videos on YouTube are so popular, which customers are most prone to experiencing greater cognitive flow and narrative transportation, and under what conditions this relationship is undesirable. For example, our research suggests that viewers of the demonstration are likely experiencing an immersive flow experience while they are transported into the unpacking process story. Future work could investigate aspects of the unpacking story which may hinder or facilitate cognitive flow and narrative transportation. These may include factors such as their similarity to the viewer, their likeability, expertise, or their tone of voice.

Future research could also examine the impact of demonstrations and narrative transportation for social media influencers. Specifically, are social media influencers more likely to attract followers and lucrative sponsorship deals when they use a process versus outcome approach because it increases their viewers' ability to become absorbed in the influencer's product story? Conversely, does narrative transportation operate differently in this type of demonstration due to other factors at play on social media?

Finally, although our research focused on B2C product demonstrations, we believe it would be fruitful for future research to explore product demonstrations in B2B settings, where demonstrations typically take place at trade shows and in exhibition halls in the presence of large

groups of companies. This research could focus on ways to mitigate the lower effectiveness of group-based presentations that we have uncovered in our experiments.

Although additional research is needed to further understand the nature of product demonstrations and their relationship with cognitive flow and narrative transportation, our results suggest that when customers view a process demonstration without other customers present, this leads to an increase in cognitive flow states and narrative transportation, which results in greater intentions to purchase the focal product(s). Despite its limitations, we argue that our research has been helpful in laying a foundation for future research, and our hope is that other researchers will continue exploring the role of product demonstrations in-store and online as the retail landscape continues to evolve.

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Table 1 – Overview of Product Demonstration Literature

Author(s)	Method	Setting/Product	Key Constructs	Demonstration Type	Manipulated Social Presence?	Key Findings
Scott (1976)	Experiment	Newspaper	Incentive offered	In-Person Product Sampling	No	Trial does not enhance the likelihood of repeat purchase behavior.
Jain, Mahajan, and Muller (1995)	Analytical Model	Durable and Nondurables	Innovation, imitation, market potential, discount rate, gross margin	In-Person Product Sampling	No	Model identifies the optimal size of product sampling for durables and nondurables.
Heiman and Muller (1996)	Analytical Model	Automobile and Computer Industry	Demonstration time and prior information	In-Person Process Demonstration	No	Most firms offered a longer demonstration than needed and did not optimize the demonstration with respect to different customer groups.
Heiman, McWilliams, and Zilberman (2001)	Conceptual	--	Prior knowledge, learning time, know-how, return costs, life cycle stage	Not Specified	No	Demonstrations can be effective when customers have high product knowledge or are able to learn quickly, and when return costs are high.
Bawa and Shoemaker (2004)	Experiments via Scanner Panels	Consumable Product	Market share, free sample, coupon promotion	In-Person Product Sampling	No	Free samples can produce measurable long-term effects on sales.
Hahn (2005)	Economic Model	--	Duopoly, customer heterogeneity, Bertrand competition	Not specified	No	Pre-purchase trial will decrease the customer surplus but will increase social welfare because the pre-purchase trial allows the customer to make a better choice between two products.
Heiman (2010)	Analytical Model	Automobile and Software	Product cost, demonstration cost, consumer search cost, monopoly, duopoly	Not specified	No	Competition diminishes demonstration efforts in the automobile industry but has the opposite effect in the software industry.
Heiman and Ofir (2010)	Analytical Model	3D Software Manufacturer	New technology, unbalanced competition, demonstration intensity, duration, functionality	In-Person Product Sampling	No	Market leaders increase the likelihood of providing demonstrations due to competition, however the intensity of the demonstration does not change.
Nordfalt and Lange (2013)	Experiments	Consumable Products	Day of the week, signs, displays, gifts, in-store location	In-Person Outcome demonstration	No	In-store product demonstrations are more effective if: hosted close to a weekend, products are displayed adjacent to the demonstration, assisted by store personnel, combined with a sign, and with an in-store television.
Ert, Raz, and Heiman (2016)	Experiments	Lottery, Real Estate, Books	Outcome skewedness, expected value	In Person Product Sampling	No	Short experience with the product increases appeal of negatively skewed products and impairs the appeal of positively skewed products.

Arora, Hofstede, and Mahajan (2017)	Web Scraping	Mobile Apps	Adoption levels, life stage, user rating, developer reputation, category, quality	In Person Product Sampling	No	Offering free versions of paid apps is negatively associated with paid app adoption speed. This is stronger for hedonic apps and in later life stages of paid apps.
Boleslavsky, Cotton, and Gurnani (2017)	Analytical Model	--	Price competition, demonstration informativeness, capacity constraints	Modeled all demonstrations the same	No	Demonstrations give customers an opportunity to learn about their own value, with more information increasing the expected valuation.
Kumar, Choi, and Greene (2017)	Analytical Model	Consumable Product	Social media, television advertising, product sampling, in-store promotion, brand sales	In-Person Product Sampling	No	The elasticities of product sampling demonstrations are greater in improving brand sales compared to television advertising which has lower elasticities.
The current research	Experiments	Consumable Products, Technology	Demonstration type, social presence, cognitive flow, narrative transportation	In-Person and Digital Process demonstration, Outcome demonstration	Yes Studies 1 & 2: no social presence; Studies 3, 4, & 5: conditions of both no social presence and social presence	Viewing a process-focused (versus outcome-focused) demonstration encourages a cognitive flow state which increases narrative transportation and facilitates customers' absorption into the product story, and results in increased purchase intentions for the demonstrated product(s), but only when the customer views the demonstration without social presence of other customers.

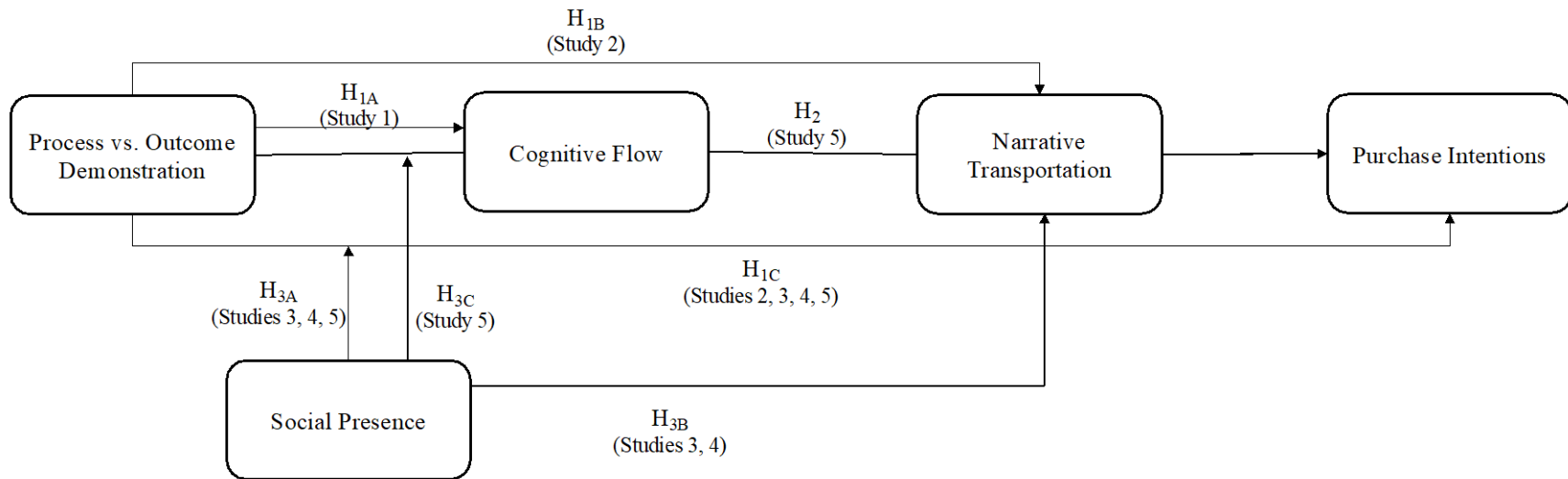
Table 2 - Overview of Studies and Findings

Study	Study	Context	Design	Findings
Study 1	Lab Study via Online Demo	Cocktail Demonstration	PD versus OD (NSP)	Viewing a process demonstration alone increases cognitive flow.
Study 2	Lab Study via In-person Demo	Bluetooth Speaker Demonstration	PD versus OD (NSP)	Viewing a process demonstration with no social presence increases narrative transportation, which results in greater purchase intentions for the focal product relative to the outcome condition.
Study 3	Lab Study via Television Demo	Appetizer Demonstration	2 x 2 PD versus OD NSP versus SP	Viewing a process demonstration with no social presence (versus with social presence) leads to a greater purchase intention for the focal branded product as well as the bundle of supporting cast of character products in the demonstration. Psychological reactance is ruled out as an alternative explanation.
Study 4	Lab Study via Television Demo	Appetizer Demonstration	2 x 2 PD versus OD NSP versus SP	Viewing a process demonstration with no social presence (versus with social presence) increases narrative transportation, which leads to greater purchase intent for the bundle of demonstrated products.
Study 5	MTurk Study via YouTube Demo	Cocktail Demonstration	2 x 2 PD versus OD NSP versus SP	Viewing a process demonstration with no social presence (versus with social presence) increases cognitive flow, which increases narrative transportation, which leads to greater purchase intent for the demonstrated products.

NOTE: PD = Process Demonstration, OD = Outcome Demonstration, NSP = No Social Presence, SP = Social Presence

Table 3 – Full PROCESS Model Results

Study	PROCESS Model #	IV	DV	Mediator(s)	Contrast	Moderator	Indirect Effect	Direct Effect
2	4	Demonstration Type	Purchase Intent	Narrative Transportation	Process versus Outcome	---	.0140, .5017	-.0749, .8678
4	8	Demonstration Type	Purchase Intent	Narrative Transportation	Process versus Outcome	No Social Presence	.9136, 2.0048	-.4924, .7936
					Process versus Outcome	Social Presence	-.4775, .7488	-.4471, .8067
5	6	Demonstration Type	Purchase Intent	(1) Cognitive Flow; (2) Narrative Transportation			.0097, .2498	-.1178, .2648
5	85	Demonstration Type	Purchase Intent	(1) Cognitive Flow; (2) Narrative Transportation	Process versus Outcome	No Views – No Social Presence	.0949, .4483	.0397, .5729
					Process versus Outcome	Many Views – Social Presence	-.1903, .1994	-.4463, .1067

Figure 1: Conceptual Model

Appendix: Scales

PANAS (1 = very slightly or not at all; 5 = extremely; Watson et al. 1988) – Study 1

- | | |
|-----------------|----------------|
| 1. Interested | 11. Irritable |
| 2. Distressed | 12. Alert |
| 3. Excited | 13. Ashamed |
| 4. Upset | 14. Inspired |
| 5. Strong | 15. Nervous |
| 6. Guilty | 16. Determined |
| 7. Scared | 17. Attentive |
| 8. Hostile | 18. Jittery |
| 9. Enthusiastic | 19. Active |
| 10. Proud | 20. Afraid |

Cognitive Flow Scale (1 = strongly disagree; 7 = strongly agree; adapted from Jackson and Marsh 1996) – Studies 1 and 5

1. I enjoyed watching the product demonstration.
2. It was no effort to keep my mind on what was happening.
3. I loved the feeling of the demonstration and want to capture it again.
4. The experience left me feeling great.
5. I was completely focused on the task at hand.
6. I liked watching the product demonstration.
7. I felt engaged while I was watching the product demonstration.
8. Watching the product demonstration was a fun experience.
9. Watching the product demonstration was an interesting experience.
10. While I was watching the product demonstration, I felt immersed in the experience.

Narrative Transportation Scale (1 = strongly disagree; 7 = strongly agree; adapted from Green and Brock 2000) – Studies 2, 4, and 5

1. While I was taking part in the product demonstration, I could easily picture the events in it taking place.
2. I could picture myself in the scene of events described in the product demonstration.
3. I was mentally involved while I was taking part in the product demonstration.
4. I was emotionally involved while taking part in the product demonstration.
5. I found myself thinking of ways the product demonstration could have turned out differently.
6. The events featured in the product demonstration are relevant to my everyday life.

Psychological Reactance Scale (1 = strongly disagree; 7 = strongly agree; Ringler et al. 2019) – Study 3

1. I become angry when my option to touch the product is restricted.
2. I become frustrated when I am unable to touch the product.
3. I am contented only when I can freely choose to touch the product.
4. The thought of being dependent on others to tell me about a product that I can't touch bothers me.
5. When touching a product is prohibited, I usually think "that's exactly what I am going to do."
6. Regulations on what I can touch in a retail store trigger a sense of resistance in me.

7. I find contradicting what retailers tell me I can touch stimulating.
8. It disappoints me to see others submitting to retailers' rules as to whether or not we can touch their products.
9. When a retailer forces me to do something, I feel like doing the opposite.
10. I resist the attempts of retailers to influence me.
11. I consider advice from salesperson to be an intrusion.
12. Advice and recommendations usually induce me to do just the opposite.
13. It irritates me when the salesperson points out things which are obvious to me.
14. It is important to me to be able to touch the product if I want to.

Reciprocity Scale (1 = strongly disagree; 7 = strongly agree; adapted from Palmatier et al. 2009) – Study 5

1. I would buy the demonstrated products based on my gratitude for the extra effort of the demonstrator.
2. I would give more business to the demonstrator because I owed it to them.
3. The demonstrator has received opportunities to sell additional products to me in the future as payback for past efforts.

Vividness Scale (1 = strongly disagree; 7 = strongly agree; adapted from Peck et al. 2013) – Study 5

1. I was able to imagine making this drink at home.
2. I felt as if the drink were in my hands.
3. I could imagine moving my fingers on the drink.
4. I felt I could examine the texture of the drink.