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GREATER THAN THE SUM OF THE PARTS:
HOW BUNDLING CREATES VALUE

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Overview

In my dissertation research, I explore the psychology of bundling. Bundling is defined as the sale of two or more separate products (i.e., goods or services) in a single package, for a single price. Bundles are typically sold at a discount (relative to the same items offered separately) and can serve as a price discrimination mechanism for firms (Adams & Yellen, 1976; Stremersch & Tellis, 2002). To that end, the limited existing work examining the psychology of bundling has largely focused on how consumers are sensitive to the pricing of the various components of bundles (Hamilton & Srivastava, 2008; Janiszewski & Cunha, 2004; Khan & Dhar, 2010).

But this literature overlooks how bundling itself might provide utility to consumers beyond just discounts. My dissertation fills this void by suggesting that when multiple products and services are combined and offered as a single unit, consumers view—and, more importantly, *value*—the resulting entity as a unique "whole" that is greater than the mere sum of the parts. Critically, this distinct and fundamental appeal of bundles yields a number of meaningful implications for consumer decision making. My dissertation explores these implications and comprises three chapters, each of which demonstrates how combining things in the marketplace—both products (Chapter 1 and Chapter 3) and events (Chapter 2)—can serve as an important source of value for consumers.

In Chapter 1, I examine how combining products into bundles affects valuation. In particular, I demonstrate a novel asymmetric effect: Consumers demand more compensation for and experience greater dissatisfaction from the loss of items from bundles, compared to the loss of the same items in isolation. Yet they express lower willingness-to-pay (WTP) for and experience less satisfaction from items added to bundles, compared to the same items purchased separately. I argue that this asymmetry in valuation (i.e., paying less, yet demanding more)

persists because bundling leads consumers to see multiple items as a single, inseparable "gestalt" unit (Koffka, 1935; Köhler, 1970), which consumers find appealing. Consequently, they resist both removing items from and adding items to bundles.

In Chapter 2, I examine whether people prefer combining events with close others through timing. Specifically, I explore the preference for simultaneity, which I define as the preference for events that happen to the self and to close others to occur at the same time. I propose that people prefer simultaneity because facilitates social connection (Baumeister & Leary, 1995). To that end, the preference for simultaneity is both moderated and mediated by the desire to connect with others.

Finally, in Chapter 3, I propose that bundles can potentially connect people. My theory of the psychology of bundling argues that people form gestalt impressions of bundles. Consequently, the components of bundles are be perceived as fundamentally connected (i.e., they cohere to form a single, inseparable "whole"). Therefore, it is possible that in social consumption settings, when consumers purchase and consume bundles with each other—when they share parts of the same "whole"—they themselves might feel closer or more connected. This work helps explain preferences for bundles in social consumption settings.

Chapter 1:

Seller Beware: How Bundling Affects Valuation

Abstract

How does bundling affect valuation? This research proposes the asymmetry hypothesis in the valuation of bundles: Consumers demand more compensation for the loss of items from bundles, compared to the loss of the same items in isolation, yet offer lower willingness-to-pay for items added to bundles, compared to the same items purchased separately. This asymmetry persists because bundling causes consumers to perceive multiple items as a single, inseparable "gestalt" unit. Thus, consumers resist altering the "whole" of the bundle by removing or adding items. Six studies demonstrate this asymmetry across judgments of monetary value (Studies 1 and 2) and (dis)satisfaction (Study 3). Moreover, bundle composition—the ability of different items to create the impression of a "whole"—moderates the effect of bundling on valuation (Study 4), and the need to replace missing items (i.e., restoring the "whole") mediates the effect of bundling on compensation demanded for losses (Study 5). Finally, we explore a boundary condition: The effect is attenuated for items that complete a set (Study 6).

Shoppers are often presented with the option to bundle multiple items together and pay a single price or purchase the same items separately and pay multiple prices (Guiltinan, 1987; Soman & Gourville, 2001; Stremersch & Tellis, 2002; Yadav & Monroe, 1994). For example, a consumer shopping online for a particular travel bag might scroll down the webpage to discover a recommendation for matching suitcases—part of a "frequently bought together" suggestion—along with the total cost of the proposed bundle. Of course, the same travel bag and matching suitcases can typically be purchased separately, as well. Do these different purchase formats affect valuation? That is, when a bundle and the sum of its parts are objectively identical, might consumers nevertheless value items differently, depending on whether they are offered as a bundle or offered separately? The present research examines this question.

In particular, we propose the asymmetry hypothesis in valuation of bundles: the prediction that consumers will demand more compensation for and experience greater dissatisfaction from the loss of items from bundles, compared to the loss of the same items in isolation. Yet consumers will offer lower willingness-to-pay (WTP) for and experience less satisfaction from items added to bundles, compared to the same items purchased separately.

We argue that this asymmetry in valuation (i.e., paying less, yet demanding more) persists because bundling leads consumers to see multiple items as a single, inseparable "gestalt" unit (Koffka, 1935; Köhler, 1970). Thus, consumers resist both removing items from and adding items to bundles. Specifically, when losing an individual component from a bundle (vs. separately), consumers suffer not only the loss of the item itself, but also the ruin of the "whole"—and, hence, demand greater compensation. Similarly, adding an additional item to a bundle would alter and therefore compromise the preexisting impression of a "whole." Thus, consumers are reluctant to needlessly tamper with an established bundle by introducing an item

that does not belong. For example, consumers will demand more compensation when a travel bag ordered as part of a luggage set arrives damaged or is missing, compared to when the same item ordered separately is similarly unavailable. However, consumers will offer less WTP for the same travel bag when it is added to a preexisting existing luggage set, compared to when it is purchased separately. In the following section, we develop the asymmetry hypothesis in the valuation of bundles by examining the psychology of bundling and proposing a theoretical framework to explain how consumers value bundles and their components.

Theoretical Background

Bundling is the sale of two or more separate products (i.e., goods or services) in one package (Stremersch & Tellis, 2002). These are products for which separate markets exist, such that at least some consumers wish to purchase the products separately. So, for example, a pair of shoes does not comprise a bundle, given that separate markets for right shoes and left shoes do not exist. Moreover, firms can engage in pure bundling, a strategy in which products can *only* be acquired as a package (i.e., "tying," in the economics literature), or mixed bundling, a strategy in which products can be acquired either as a package or separately.

Previous research has distinguished between *price* bundling and *product* bundling (Stremersch & Tellis, 2002). Price bundling involves the sale of two or more separate products as a package at a discount and can serve as a price discrimination mechanism (Adams & Yellen, 1976). Research on price bundling has explored discount framing effects, which show that consumers are sensitive to how discounts are applied to the different components of a bundle (Janiszewski & Cunha, 2004). For example, consumers prefer bundles for which low-benefit (vs. high-benefit) components cost less (Hamilton & Srivastava, 2008) and bundles that frame discounts as savings on relatively hedonic (vs. utilitarian) components (Khan & Dhar, 2010).

Product bundling strategies, on the other hand, involve the sale of two or more products that complement each other and thus, add value when combined. For example, Popkowski and Häubl (2010) demonstrate that auctions for bundles of stamps (vs. separate auctions for separate stamps) are more profitable when the stamps are complements, rather than substitutes.

Product complementarity implies that WTP for one product is increased when another product is acquired (i.e., exhibiting "super-additivity" in utility; Guiltinan, 1987) and suggests, more broadly, that bundling can create value for consumers. For instance, a bundle might offer enhanced convenience by preconfiguring a set of items, thereby reducing potential search costs. As in the earlier example, an online shopper planning to purchase a particular travel bag may also be interested in matching suitcases. A luggage set that already includes these items obviates the need to search for the matching products. Moreover, consumers are not always aware of which products they need in the first place. A first-time vehicle owner, for example, might not know which automotive services (e.g., oil change, tire rotation, safety inspection, etc.) should be scheduled. Purchasing a comprehensive maintenance bundle, however, assures coverage of the new driver's automotive service needs. These features suggest that bundles are often distinct from the same component items offered separately.

Bundles Create a Gestalt

The tendency to organize multiple elements into a distinct entity (i.e., a "whole") is an automatic psychological process. The result is the formation of a gestalt—a holistic integration of multiple items perceived as *other* than the sum of the parts (Koffka, 1935; Köhler, 1970). For example, people tend to imbue seemingly arbitrary collections of lines and shapes with structure or form by establishing connections between and among disparate items (e.g., filling in gaps, seeing patterns, and recognizing incomplete images; Kanizsa, 1979; Palmer, 2002). In the same

way, consumers integrate their perceptions of marketing messages and product offerings to form gestalt-level impressions of brands and firms (Park, Jaworski, & Maclnnis, 1986). Additionally, co-branding arrangements (e.g., pairing a less-known brand with a well-known brand) are effective, in part, because consumers perceive brands in a unitary configuration (Cunha, Forehand, & Angle, 2015).

Building upon these findings, we argue that a similar process leads consumers to holistically perceive multiple items as a single, inseparable "gestalt" unit when products are bundled. Indeed, when consumers evaluate bundles, they aim to form an impression of the items as a whole (Weaver, Garcia, & Schwarz, 2012) and exhibit preferences for product sets that "fit" together (Evers, Inbar, & Zeelenberg, 2014). Previous research has also shown that bundles are treated differently than the individual components thereof (Wertenbroch, 1998). For example, Mishra, Mishra, and Nayakankuppam (2006) point to a "bias for the whole" in documenting consumers' reluctance to break large denomination bills, which are psychologically less fungible than equivalent amounts in smaller denomination bills (Raghubir & Srivastava, 2009). Together, these results suggest that bundles are, in fact, *other* than the sums of their parts.

The Asymmetry Hypothesis in the Valuation of Bundles

We propose the asymmetry hypothesis in the valuation of bundles, which predicts that while consumers demand more compensation for and experience greater dissatisfaction from the loss of items from bundles, compared to the loss of the same items in isolation, they nevertheless offer lower WTP for and experience less satisfaction from items acquired as or added to bundles, compared to the same items purchased separately.

We argue that this asymmetry in valuation persists because bundling leads consumers to see multiple items as a single, inseparable "gestalt" unit. As a result, when an item is lost from a

bundle, compared to when the same item is lost in isolation, consumers suffer not only the loss of the item itself, but also the ruin of the "whole" of the bundle. Hence, consumers demand more compensation and experience greater dissatisfaction. For example, consider paying a single price for a multi-course meal, compared to paying separate prices for the same dishes individually. If the dessert is unexpectedly unavailable when offered as part of the bundle, the meal itself—and not simply the dessert—is implicated and subsequently ruined. When purchased separately, however, the same unexpected unavailability affects only the dessert. Thus, the loss of a dessert from a bundle will cause consumers to demand more compensation and experience greater dissatisfaction than will the loss of the same dessert purchased separately.

In acquisition, however, we predict the opposite pattern. Adding an additional item to a bundle would alter and therefore compromise the preexisting impression of a "whole." Thus, consumers are reluctant to needlessly tamper with an established bundle by introducing an item that does not belong. For example, if a diner has already purchased a multi-course meal, the prospect of adding yet another course would seem unnecessary, compared with adding the same dish to multiple dishes purchased separately. The multi-course meal, when presented as a bundle, is already "whole." Moreover, consumers expect to pay less for what is perceived as a single unit (i.e., the bundle), compared to multiple units (i.e., separate items). As such, consumers will offer lower WTP for and experience less satisfaction from items acquired as or added to bundles, compared to the same items purchased separately.

Given that we describe opposite patterns for losses and gains, it is natural to consider our asymmetry hypothesis in light of loss aversion and the endowment effect (Kahneman, Knetsch, & Thaler, 1990; Nayakankuppam & Mishra, 2005). Specifically, Park, Jun, and MacInnis (2000) demonstrate loss aversion in the context of bundles. They find that when presented with a fully-

loaded product and asked to remove undesired features, consumers choose to keep more options and incur higher total costs, compared to when presented with a base model and asked to add desired features. Thus, by comparing losses from bundles with additions to bundles, Park et al. (2000) capture a main effect of loss versus gain framing in the valuation of bundles. However, previous research has not examined the effect of bundling *itself* on valuation. To that end, we compare losses from bundles with losses in isolation, and we compare additions to bundles with additions in isolation. We predict that on top of loss aversion (i.e., the aversion to removing items from bundles, compared to adding items to bundles; Park et al., 2000), consumers will exhibit a reluctance to remove items from bundles, compared to removing items in isolation, as well as a reluctance to add items to bundles, compared to adding items in isolation.

Whereas prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992) has not directly addressed these specific comparisons (i.e., bundling vs. offering the same items separately), we suggest that it could potentially make a different prediction. In particular, both the gain and loss functions described by prospect theory display diminishing marginal sensitivity. Therefore, it is possible that the loss of a single item from multiple items (i.e., from a bundle) and the addition of a single item to multiple items (i.e., to a bundle) are experienced farther from the relevant reference point (i.e., with diminished marginal sensitivity), compared to items lost or added separately. This interpretation of prospect theory argues for a main effect of bundling: Consumers should pay more for an item in isolation, compared to the same item added to a bundle, and demand more for a loss in isolation, compared to same the loss from a bundle. While this interpretation of prospect theory makes a similar prediction as our account for acquisition, neither loss aversion, specifically, nor prospect theory, more broadly, capture our proposed asymmetry in the effect of bundling on valuation.

Finally, consumers also expect discounts for and infer savings from the purchase of products as bundles (Estelami, 1999; Heeler, Nguyen, & Buff, 2007). Such an account might describe why consumers would expect to pay less for items acquired as bundles, compared to the same items purchased separately. But paying less in acquisition should also lead consumers to demand less compensation for losses. So, for example, if consumers value a particular item less when it is purchased as part of a bundle, compared to when it is purchased separately, consumers should demand less compensation for the loss of that item (e.g., when it is subsequently missing, unavailable, or sold). However, we predict an opposite pattern for losses: Consumers will demand more compensation for the loss of items from bundles, compared to the loss of the same items in isolation. Additionally, we predict corresponding differences in satisfaction (and dissatisfaction)—that is, consumers should be more dissatisfied about losing an item from a bundle (vs. in isolation), yet be less satisfied about acquiring or adding to bundles—which cannot be accounted for by pricing expectations in the marketplace.

Present Research

We examine the proposed asymmetry in valuation:

H1: Consumers will demand more compensation for items lost from bundles, compared to the same items lost in isolation. Yet, consumers will offer lower WTP for items acquired as or added to bundles, compared to the same items purchased separately.

We also examine the subjective experience of loss and acquisition:

H2: Consumers will experience greater dissatisfaction when losing items from bundles, compared to when losing items in isolation. Yet, consumers will

experience less satisfaction when acquiring or adding to bundles, compared to when acquiring items separately.

Next, Hypotheses 3–5 test the psychological properties of bundling. We argue that the bundle is distinct—*other* than the mere sum of the parts. Therefore, to the extent that the components of a bundle are viewed as less of a distinct "whole"—and, by extension, merely the sum of the parts—the predicted asymmetric pattern in valuation will be attenuated. As such, consumers should be less likely to view a bundle of identical products purchased in bulk as a single, inseparable "gestalt" unit because there is little that is distinct—or *other*—about a bundle of undifferentiated items, compared to those same items offered separately:

H3: Bundle composition will moderate the asymmetry in valuation (H1), such that differences in compensation demanded and WTP will be attenuated when items are undifferentiated.

Moreover, because bundling leads consumers to see multiple items as a single, inseparable "gestalt" unit, consumers should express a greater need to replace an item lost from a bundle, compared to the same item lost in isolation. In the latter case, a replacement allows for recovery of just the missing item. In the former case, a replacement not only allows for recovery of the item itself, but also reestablishes the "whole" of the bundle. We suggest that it is precisely this ruin of the "whole" that accounts for differences in compensation demanded for losses from bundles, compared to losses in isolation. Thus, greater perceived importance of replacing an item lost from a bundle, compared to the importance of replacing the same item lost in isolation, would corroborate our account of bundles as singular entities:

H4: Greater perceived need to replace items lost from bundles, compared to the same items lost separately, will mediate the effect of bundling on compensation demanded for losses.

Finally, an important boundary condition to consider is whether a state of completion is an objective property of the target items. When a particular item completes a set or collection, a set completion or collection goal provides extra motivation for acquisition and retention (Belk, 1995; Gao, Huang, & Simonson, 2014). For example, a specific stamp that completes a stamp set will command a premium (Popkowski & Häubl, 2010). Critically, if a state of completion is an objective property of the target items, the impression of a "whole" will principally depend on the completeness of the set, and acquiring or holding onto the final component of a set or collection would allow consumers to realize or maintain the "whole." In these situations, therefore, the perception of a "whole" is defined by a state of completion, rather than whether the items are offered as a bundle or separately. Consequently, we expect attenuation of the effect:

H5: The asymmetry in valuation (H1) will be attenuated when adding an item completes a set (in acquisition) or losing an item renders a set incomplete (for losses).

Moreover, this boundary condition provides further evidence that the "gestalt" impression caused by bundling is the mechanism by which the asymmetry in valuation arises.

Together, moderation by bundle composition (H3), mediation by the need to restore the "whole" (H4), and the set completion boundary condition (H5) provide explicit tests of our proposed psychological process for the asymmetry hypothesis in the valuation of bundles. We examined these hypotheses across six studies.

Study 1: Bundling Increases Compensation Demanded for Losses, Yet Decreases WTP in Acquisition

Study 1 tested the proposed asymmetry in valuation (H1) in a consequential choice task, with real economic implications. Participants bought or sold a popular type of energy bar—Clif Bars—which were bundled or offered separately. We examined willingness-to-accept (WTA) for the sale of a Clif Bar and willingness-to-pay (WTP) for the purchase of multiple Clif Bars. We predicted that participants would (1) list higher selling prices for a single Clif Bar sold from a bundle, compared to a single Clif Bar sold separately, and (2) offer lower WTP when acquiring three Clif Bars as a bundle, compared to when acquiring the same three Clif Bars separately.

Method

We recruited 192 undergraduate and graduate students (M_{age} = 23.12, SD_{age} = 6.81; 90 females, 99 males, three undisclosed) in exchange for an Amazon.com gift card and Clif Bars. Study 1 employed a 2 (scenario: *lose* vs. *add*) × 2 (presentation: *bundled* vs. *separate*) between-subjects design. In the *lose* condition, we assessed WTA for the sale of a single item, either sold from a bundle or sold separately. In the *add* condition, we assessed WTP for three items, either acquired as a bundle or acquired separately.

In the *lose* condition, a research assistant approached students at an on-campus dining hall and recruited potential participants for a two-part study. As compensation, the research assistant offered participants three different Clif Bars (flavors: White Chocolate Macadamia Nut, Coconut Chocolate Chip, and Chocolate Brownie). After completing a questionnaire about preferences for Clif Bars, those assigned to the *bundled* condition received a bundle of three Clif Bars (tied together with twine and labeled, "Clif Bar Chocolate Variety Pack"), while those

assigned to the *separate* condition received the same three Clif Bars separately (i.e., not tied together).

At this point, a second research assistant approached each participant, explaining that the second part of the study would involve determining how much compensation the participant would require to sell back one of the recently acquired Clif Bars. The research assistant then asked each participant to indicate a minimum selling price for the (ostensibly randomly selected) Chocolate Brownie Clif Bar. In order to incentivize disclosure of actual WTA, the research assistant explained that if the minimum selling price offered by the participant met or fell below a predetermined reservation price, the transaction would take place at the reservation price (Becker, DeGroot, & Marschak, 1964).

In the *add* condition, a research assistant similarly recruited participants for a two-part study at the same location. As compensation for participation, the research assistant offered participants a $5.00 Amazon.com gift card. Participants who agreed to participate then completed the same questionnaire about Clif Bars, but did not receive any Clif Bars.

At this point, a second research assistant approached each participant, explaining that the second part of the study would involve determining how much people would be willing to pay for Clif Bars. The research assistant then asked participants to indicate what, if any, portion of the $5.00 Amazon.com gift card they would be willing to spend to acquire three different Clif Bars (flavors: White Chocolate Macadamia Nut, Coconut Chocolate Chip, and Chocolate Brownie). Those assigned to the *bundled* condition offered their WTP for a bundle of three Clif Bars (tied together with twine and labeled, “Clif Bar Chocolate Variety Pack”), while those assigned to the *separate* condition offered their WTP for same three Clif Bars separately (i.e., not tied together). Again, in order to incentivize disclosure of actual WTP, the research assistant

explained that if the maximum purchase price offered by the participant met or exceeded a predetermined reservation price for the bundle or each of the Clif Bars, the transaction would take place at the reservation price. Participants' listed prices were consequential, and transactions were executed in accordance with our predetermined reservation prices ($0.50 per Clif Bar).

Results and Discussion

To confirm our manipulation, we presented, in counterbalanced order, images of both bundled and separate Clif Bars to 31 U.S.-based Amazon Mechanical Turk (MTurk) workers, who rated: "Do the above items form a bundle or are they separate entities?" ("completely separate" = 1; "form a bundle" = 7). To capture the extent to which participants maintained a "gestalt" impression of the bundles, participants also rated: "Do the above items feel like they belong together?" and "Do the above items go well together?" (for both: "not at all" = 1; "very much so" = 7). Confirming the manipulation, participants indicated that the Clif Bars offered as a bundle formed a bundle more so than the same Clif Bars offered separately (see Table 1.1). Collapsing the two "gestalt" impression questions ($r(31) = .95$, $p < .001$), we also found that participants maintained a higher "gestalt" impression for the Clif Bars offered as a bundle than for the same Clif Bars offered separately. We ran these manipulation checks and gestalt impression tests for Studies 2, 3, and 5, using the same within-subjects design and a different sample for each (Studies 4 and 6 employed different designs). Also, while Studies 1–3 used on-campus and museum samples, we drew from MTurk for our manipulation checks.

Testing our main hypothesis, an ANOVA of valuation on scenario (*lose* vs. *add*) and presentation (*bundled* vs. *separate*) yielded a main effect of presentation ($F(1, 188) = 5.04$, $p = .026$), such that valuation in the *separate* condition exceeded valuation in the *bundled* condition, and a main effect of scenario ($F(1, 188) = 29.51$, $p < .001$), such that (unsurprisingly) purchase

prices for three Clif Bars exceeded selling prices for a single Clif Bar. More importantly, as predicted (H1), the ANOVA revealed the predicted two-way interaction ($F(1, 188) = 29.35$, $p < .001$). Within the *lose* condition, participants indicated higher selling prices for a single Clif Bar removed from a bundle (M = \$2.45, SD = \$1.00) than for a single Clif Bar sold separately (M = \$1.98, SD = \$.90; $F(1, 188) = 5.03$, $p = .026$; see Figure 1.1). Within the *add* condition, however, participants offered lower WTP for the bundle of three Clif Bars (M = \$2.45, SD = \$1.18) than for the three Clif Bars sold separately (M = \$3.58, SD = \$.99; $F(1, 188) = 29.36$, $p < .001$).

These results demonstrate the proposed asymmetry in valuation (H1) with economically consequential choices. When facing the loss of an individual component from a bundle, participants demanded greater compensation, compared to when facing the same loss in isolation. However, participants also expected to pay less for the acquisition of a single unit (i.e., the bundle), compared to the purchase of multiple units (i.e., separate items).

We do not compare responses between the *lose and add* conditions in this design, because we solicited WTA for a single item and WTP for three items. Moreover, within the *add* condition, participants offered a single WTP value for one item (i.e., the bundle) or three WTP values for three items (i.e., each Clif Bar), which we summed to calculate total valuation. Thus, it is possible that the elicitation procedure caused the latter to exceed the former. For example, participants may have exhibited diminishing marginal utility for each Clif Bar in the bundle, but not for each Clif Bar in isolation. Or scaling differences could have artificially yielded differences in WTP (e.g., participants possibly considered a different range of values for a bundle, compared to a single item). Therefore, in Study 2, in order to assess the robustness of the proposed asymmetry, we held the target item constant and examined its valuation when lost from a bundle, lost separately, added to a bundle, or added separately.

Study 2: Greater Valuation of an Item Lost From a Bundle, Yet Less Valuation of the Same Item Added to a Bundle

We designed Study 2 to demonstrate the asymmetry in valuation (H1) in another consequential choice task, with real economic implications. In Study 2, we held the target item constant (a Lindt LINDOR milk chocolate truffle) and manipulated whether it was sold or bought as part of a bundle or separately. We predicted that participants would (1) set higher selling prices for a truffle originally acquired as part of a bundle, compared to the same truffle originally acquired separately, and (2) offer lower WTP for a truffle added to a bundle than for the same truffle added separately.

Method

We recruited 188 undergraduate and graduate students at an on-campus research laboratory in exchange for a $1.00 Amazon.com gift card and Lindt LINDOR chocolate truffles. One hundred eighty-seven participants (M_{age} = 21.21, SD_{age} = 6.73; 109 females, 78 males) remained in the study after we excluded one participant who was allergic to chocolate. Study 2 employed a 2 (scenario: *lose* vs. *add*) × 2 (presentation: *bundled* vs. *separate*) between-subjects design. The dependent variable of interest was valuation of a milk chocolate truffle.

In the *lose* condition, participants received four different flavors of Lindt LINDOR chocolate truffles at the outset of the study (caramel chocolate, dark chocolate, milk chocolate, and white chocolate). For those assigned to the *bundled* condition, a research assistant placed the truffles into a small paper bag, and handed the bag to the participant. Each bag was labeled, "Lindt LINDOR Chocolate Truffle Bundle." For those assigned to the *separate* condition, the research assistant handed the individual truffles to the participant. Participants then completed a questionnaire about Lindt LINDOR chocolate truffles that required participants to sign their

initials either once (acknowledging receipt of the bundle, in the *bundle* condition) or four times (acknowledging receipt of each flavor, in the *separate* condition).

Next, the research assistant explained that the second stage of the study would involve determining how much compensation the participant would require to sell back one of the recently acquired truffles. In order to incentivize disclosure of true WTA, the research assistant explained that the transaction would take place, at a predetermined reservation price, if the minimum selling price offered by the participant met or fell below that predetermined reservation price. The research assistant further explained that the reservation price could be, at most, $1.00, which was the maximum possible valuation in this paradigm.

In the *add* condition, participants received *three* different flavors of Lindt LINDOR chocolate truffles at the outset of the study (caramel chocolate, dark chocolate, and white chocolate), either as a bundle or separately, and completed the same questionnaire. Next, the research assistant explained that the second stage of the study would involve determining how much the participant would be willing to pay to acquire an additional truffle. In order to incentivize disclosure of true WTP, the research assistant explained that the transaction would take place, at a predetermined reservation price, if the maximum purchase price offered by the participant met or exceeded that predetermined reservation price (at most $1.00). Participants' listed prices in all conditions were economically consequential, and transactions were executed in accordance with our predetermined reservation prices ($0.50 per truffle).

Results and Discussion

Prior to analyzing the data, we recoded to $1.00 eight responses that exceeded the maximum possible valuation of $1.00. That is, when a participant offered a WTA or WTP value

that exceed the maximum in the task (i.e., $1.00), we coded the response as $1.00 (the results remain statistically significant after dropping these observations).

An ANOVA of valuation on scenario (*lose* vs. *add*) and presentation (*bundled* vs. *separate*) revealed a main effect of scenario ($F(1, 183) = 12.76$, $p < .001$), such that selling prices exceeded purchase prices. This main effect is consistent with loss aversion and previous research demonstrating the endowment effect. There was no main effect of presentation ($F < 1$). More importantly, as predicted (H1), the ANOVA revealed a two-way interaction ($F(1, 183) = 11.29$, $p = .001$). Specifically, in the *lose* condition, those who sold a truffle from a bundle set a higher minimum selling price (M = $0.57, SD = $0.28) than did those who sold the same truffle separately (M = $0.43, SD = $0.32; $F(1, 183) = 5.97$, $p = .016$; see Figure 1.2). In contrast, in the *add* condition, those who added a truffle to a bundle offered lower WTP (M = $0.28, SD = $0.27) than did those who acquired the same truffle separately (M = $0.42, SD = $0.29; $F(1, 183) = 5.37$, $p = .022$).

We also note that while we observed a main effect of scenario consistent with loss aversion, we only observed an endowment effect in the *bundled* condition ($F(1, 183 = 23.16$, $p < .001$). In the *separate* condition, we did not observe an endowment effect ($F(1, 183) = .02$, $p = .878$). We discuss a potential explanation in the General Discussion.

Holding the target item constant, Study 2 again revealed the predicted asymmetry in valuation: WTA for an item sold from a bundle was higher than WTA for the same item sold separately, while WTP for an item added to a bundle was lower than WTP for the same item added separately. We explain that this asymmetric effect of bundling arises because consumers resist altering the "whole" of the bundle and are reluctant to both remove items from and add items to bundles. However, for acquisition, our results can also be potentially explained by

inferences about the pricing of bundles and their components in the marketplace. That is, consumers expect discounts for and infer savings from bundles (Estelami, 1999; Heeler, Nguyen, & Buff, 2007) and may therefore expect to pay less to add an item to a bundle. To address this alternative, we next examined the effect of bundling on the subjective experiences of dissatisfaction from loss and satisfaction from acquisition (rather than WTA and WTP), depending on whether items were offered as a bundle or separately. Presumably, there are no norms in the marketplace for how consumers are expected to feel.

Study 3: Greater Dissatisfaction For a Loss From a Bundle, Yet Less Satisfaction For the Same Item Added to a Bundle

We designed Study 3 to examine, in a consequential choice task located in a field setting, the effect of bundling on the emotional costs and benefits of losing and acquiring items, respectively. Specifically, in Study 3, participants experienced either the actual loss or actual gain of a holiday card. In order to test whether bundling causes, for the same item, both greater dissatisfaction for losses and less satisfaction in acquisition (H2), we manipulated whether the holiday card was unexpectedly unavailable after it had been selected along with other holiday cards (either as part of a bundle or separately) or unexpectedly added to other holiday cards that had been selected (either as a bundle or separately).

We predicted that the loss of the holiday card from a bundle would yield greater reported dissatisfaction than would the loss of the same holiday card in isolation, while adding the holiday card to a bundle would yield less reported satisfaction than would adding the same holiday card separately.

Method

In the two weeks prior to Christmas, we recruited 208 adults at a large Midwestern science museum to take part in a "Christmas Cards Survey," which involved evaluating Christmas cards. We told participants that they would receive Christmas cards as compensation. Two hundred six participants (M_{age} = 39.29, SD_{age} = 18.11; 149 females, 57 males) remained in the study after we excluded two participants who left before completing the full procedure.

Study 3 employed a 2 (scenario: *lose* vs. *add*) × 2 (presentation: *bundled* vs. *separate*) between-subjects design, with different dependent variables for the *lose* and *add* conditions: In the *lose* condition, participants reported their dissatisfaction associated with the unexpected unavailability of a Christmas card, which had been selected as part of a bundle or selected separately. In the *add* condition, participants reported their satisfaction after unexpectedly receiving the same Christmas card as an extra gift, either added to a bundle or added separately.

In the first stage of the *lose* condition, those assigned to the *separate* condition evaluated seven different Christmas cards presented separately (e.g., "How much do you like this card?"). The seven cards were organized into three categories (i.e., rows): three animal cards, three plant cards, and a single candy canes card. Participants then read they would receive three of the seven cards to take home as a gift, and were asked to "select the Christmas cards you wish to receive (one in each row)." Because the candy canes card was the only card offered in the third category (i.e., the third row), all participants selected the candy canes card.

The *bundled* condition followed a similar procedure; however, rather than evaluating seven different Christmas cards presented separately, participants evaluated nine bundles that each contained three cards. The nine bundles represented every possible combination of the three animal cards and three plant cards, and every bundle included the candy canes card. For each bundle, participants answered the same two questions as in the *separate* condition and then

selected one of the nine bundles to take home as a gift. Because the candy canes card was offered as part of every bundle, all participants selected a bundle that included the candy canes card.

In the second stage of the *lose* condition, a research assistant fulfilled orders for participants. Those assigned to the *separate* condition were told: "I see you chose the [first card selected], the [second card selected], and the candy canes card. I'm sorry, but the candy canes card is not available." Those assigned to the *bundled* condition were told: "I see you chose [package selected]. I'm sorry, but the candy canes card in this bundle is not available."

In the first stage of the *add* condition, those assigned to the *separate* condition followed the same initial procedure as those assigned to the *separate* condition of the *lose* condition. However, participants evaluated six, rather than seven, cards (we excluded the candy canes card). By the end of the survey, participants had to select two of the six cards to take home (again, one in each category). The *bundled* condition followed a similar procedure; however, participants evaluated nine different bundles that each contained two cards (no bundle included the candy canes card). Participants then selected one of the nine bundles to take home.

In the second stage of the *add* condition, a research assistant fulfilled the orders for participants. Those assigned to the *separate* condition were told: "I see you chose the [first card selected] and the [second card selected]. Good news. We also have an extra candy canes card." Those assigned to the *bundled* condition were told: "I see you chose [package selected]. Good news. We also have an extra candy canes card to add to the package."

Finally, all participants completed a follow-up survey, which included several filler questions and a section containing the dependent variables: "When running this study, sometimes we have extra cards, and sometimes cards are not available. Did you receive any extra cards from the experimenter today?" Participants in the *lose* condition circled "no," while

participants in the *add* condition circled "yes," identified the relevant card and indicated their satisfaction: "Rate your satisfaction on a 0–100 scale (0 = not at all *satisfied*; 100 = extremely *satisfied*)." We next asked: "Were any cards not available today?" Participants in the *add* condition circled "no," while participants in the *lose* condition circled "yes," identified the relevant card, and indicated their dissatisfaction: "Rate your dissatisfaction on a 0–100 scale (0 = not at all *dissatisfied*; 100 = extremely *dissatisfied*)."

Results and Discussion

Prior to analyzing the data, we excluded 19 blank responses for ratings of dissatisfaction or satisfaction. In support of our hypothesis (H2), participants who experienced the loss of the candy canes card selected as part of a bundle expressed greater dissatisfaction (M = 25.43, SD = 30.36) than did participants who experienced the loss of the same candy canes card selected separately (M = 12.17, SD = 24.52; t(90) = 2.28, p = .025; see Figure 1.3). For acquisition, however, the pattern reversed. Participants who acquired the candy canes card as part of a bundle expressed less satisfaction (M = 82.88, SD = 21.84) than did participants who acquired the same candy canes card separately (M = 91.60, SD = 13.64; t(93) = 2.34, p = .022).

These results demonstrate that the loss of an item from a bundle yields greater dissatisfaction than the loss of the same item in isolation, while the acquisition of an item as a part of a bundle yields less satisfaction than the acquisition of the same item separately. These findings rule out competing explanations based on inferences about the pricing of bundles and their components in the marketplace. Participants reported only their subjective experience of loss or acquisition, depending on whether items were offered as a bundle or offered separately. Moreover, the results of Study 3 are consistent with the asymmetry in valuation observed in Studies 1 and 2, given that lower WTP (in acquisition) should be associated with less satisfaction

and greater compensation demanded (for losses) should be associated with greater dissatisfaction. With evidence for the asymmetry in valuation across multiple domains, we next examined the underlying psychological process.

Study 4: Moderation by Bundle Composition

We designed Study 4 to test a moderator: bundle composition (H3). Bundling leads consumers to see multiple items as a single, inseparable "gestalt" unit. Therefore, to the extent the components of a bundle are viewed as less of a distinct "whole," the asymmetry in valuation should be attenuated.

One relevant context in this regard is that of bulk purchases, wherein products are uniform and undifferentiated. Almost by definition these types of bundles are merely the sums of their parts. Consequently, consumers should be less likely to view a bundle of identical products purchased in bulk as a single, inseparable "gestalt" unit, because there is little that is distinct—or *other*—about a bundle of five undifferentiated items, compared to the same five items offered separately. To that end, we tested moderation by bundle composition by manipulating whether participants considered differentiated items (e.g., five vouchers for five different automotive services) or undifferentiated items (e.g., five vouchers for five oil changes).

Method

We recruited 800 U.S.-based MTurk workers in exchange for $0.75. Seven hundred eighty-nine participants (M_{age} = 34.49, SD_{age} = 12.01; 330 females, 459 males) remained in the study after we removed those who failed an attention check ("Hopefully you have been reading carefully. If so, please do not answer this question") and/or admitted to answering questions randomly. We employed the same exclusion criteria in all studies conducted online.

Study 4 employed a 2 (scenario: *lose* vs. *add*) × 2 (presentation: *bundled* vs. *separate*) × 2 (composition: *differentiated* vs. *undifferentiated*) between-subjects design. In the *lose* condition, we assessed WTA for the sale of a single item, either from a bundle or separately. In the *add* condition, we assessed WTP for five items, offered as a bundle or separately.

Participants in the *lose* condition imagined that they had purchased vouchers for various automotive services from their local car dealership, either as a bundle or separately. We manipulated the composition of the vouchers presented to participants. Those assigned to the *differentiated* condition read that they had purchased vouchers for five different services: exterior car wash, oil change, tire rotation, interior car detailing, and a safety inspection. Those assigned to the *undifferentiated* condition read that they had purchased vouchers for five identical services: five oil changes. In the *separate* condition, these services were presented as an unlabeled list, while in the *bundled* condition, these services were labeled as either a "Full Service Vehicle Maintenance Package" (*differentiated* condition) or a "Full Service Oil Change Package" (*undifferentiated* condition). Participants in the *lose* condition then indicated their WTA to sell an oil change voucher ("I would not be willing to accept less than $_____ in exchange for [one of] the oil change voucher[s].")

Participants in the *add* condition also imagined purchasing vouchers for various automotive services from their local car dealership, either as a bundle or separately. We then manipulated the composition of the vouchers presented to participants. Those assigned to the *differentiated* condition read that they planned to purchase vouchers for five different services: exterior car wash, oil change, tire rotation, interior car detailing, and a safety inspection. Those assigned to the *undifferentiated* condition read that they planned to purchase vouchers for five identical services: five oil changes. In the *separate* condition, these services were presented as an

unlabeled list, while in the *bundled* condition, these services were labeled as either a "Full Service Vehicle Maintenance Package" (*differentiated* condition) or a "Full Service Oil Change Package" (*undifferentiated* condition). Participants in the *add* condition then offered their WTP for the vouchers ("How much would you be willing to pay for [the bundle/each]?").

Results and Discussion

To capture the extent to which participants maintained a "gestalt" impression of the bundles, we presented 30 U.S.-based MTurk workers with the descriptions of both types of bundles. For each type of bundle, they rated: "Does this bundle feel like a distinct entity, or does it feel like just the sum of its parts?" ("feels like just the sum of its parts" = 1; "feels like more than the sum of its parts" = 7). Consistent with our account, participants indicated that the differentiated bundle felt like more than the sum of its parts (i.e., felt like a "gestalt" unit; M = 4.90, SD = 1.95) than the undifferentiated bundle (M = 3.73, SD = 2.00; paired t(29) = 2.41, p = .023).

Before testing our main hypothesis, we log-transformed WTP and WTA because the distribution of the raw valuation responses was significantly right-skewed ($\chi^2(2) = 781.60$, $p <$ .001). In the results that follow, we report the raw valuation responses, but perform our statistical tests on the log-transformed variables.

An ANOVA of valuation on scenario (*lose* vs. *add*), presentation (*bundled* vs. *separate*), and composition (*differentiated* vs. *undifferentiated*) revealed a main effect of scenario (F(1, 781) = 444.53, $p <$ .001), such that (unsurprisingly) WTP for five vouchers exceeded WTA for a single voucher, and a main effect of composition (F(1, 781) = 8.16, p = .004), such that valuation was greater for differentiated products than for undifferentiated products. More importantly, as

predicted (H3), the ANOVA yielded a three-way interaction ($F(1, 781) = 7.82$, $p = .005$), confirming moderation of the asymmetry in valuation by bundle composition (see Figure 1.4).

Specifically, within the *lose* condition (i.e., for WTA), we observed a significant presentation (*bundled* vs. *separate*) by composition (*differentiated* vs. *undifferentiated*) two-way interaction ($F(1, 781) = 5.02$, $p = .025$). For the *differentiated* condition, those who imagined selling the oil change voucher from a bundle of five different automotive services indicated higher selling prices ($M = \$66.51$, $SD = \$110.22$) than did those who imagined selling the same voucher separately ($M = \$29.62$, $SD = \$23.70$; $F(1, 781) = 26.27$, $p < .001$). A similar, yet attenuated pattern emerged for the *undifferentiated* condition ($M_{bundled} = \$39.93$, $SD = \$36.94$ vs. $M_{separate} = \$27.68$, $SD = \$11.80$; $F(1, 781) = 3.98$, $p = .046$). Consistent with our account, the difference in WTA between the *bundled* condition and the *separate* condition narrowed for undifferentiated products, compared to differentiated products.

Within the *add* condition (i.e., for WTP), we observed a marginally significant presentation (*bundled* vs. *separate*) by composition (*differentiated* vs. *undifferentiated*) two-way interaction ($F(1, 781) = 2.96$, $p = .086$). For the *differentiated* condition, those who imagined purchasing a bundle of five different automotive services indicated lower WTP ($M = \$83.33$, $SD = \$57.14$) than did those who imagined purchasing the same five vouchers separately ($M = \$132.77$, $SD = \$91.21$; $F(1, 781) = 23.75$, $p < .001$). Again, a similar, yet attenuated pattern emerged for the *undifferentiated* condition ($M_{bundled} = \$89.16$, $SD = \$68.12$ vs. $M_{separate} = \$105.57$, $SD = \$61.19$; $F(1, 781) = 5.64$, $p = .018$). That is, the effect of bundling narrowed for undifferentiated products, compared to differentiated products.

The three-way ANOVA also yielded a scenario (*lose* vs. *add*) by presentation (*bundled* vs. *separate*) two-way interaction ($F(1, 765) = 51.56$, $p < .001$), replicating the asymmetry in

valuation observed in Studies 1 and 2. Furthermore, although WTP for multiple items naturally exceeded WTA for a single item (as in Study 1), we can test for loss aversion within just the *separate* condition, wherein participants offered WTP separately for either one oil change voucher (along with four other vouchers for vehicle services; *differentiated* condition) or five oil change vouchers (*undifferentiated* condition). In this latter condition, we examined WTP for just the first oil change voucher. A two-way ANOVA of valuation on scenario (*lose* vs. *add*) and composition (*differentiated* vs. *undifferentiated*) revealed a main effect of scenario ($F(1, 370) = 10.87$, $p = .001$), such that WTA for the oil change voucher (M = \$28.63, SD = \$18.60) exceeded WTP (M = \$25.06, SD = \$15.93), consistent with loss aversion and previous research demonstrating the endowment effect.

Another relevant consideration in light of these results is whether the oil change voucher was simply the most highly valued item. If so, participants may have been more sensitive to its loss when possessing only a single valuable voucher (compared to five in the *undifferentiated* condition). To address this concern, within the *separate* condition, we calculated WTP for each of the services from the *differentiated* condition (car wash: M = \$11.50, SD = \$7.61; oil change: M = \$27.12, SD = \$16.76; tire rotation: M = \$25.96, SD = \$21.43; interior car detailing: M = \$34.82, SD = \$29.12; safety inspection: M = \$33.38, SD = \$39.57). Thus, WTP for the oil change voucher was not unusually high. Therefore, the observed moderation by bundle composition cannot be accounted for by the relative value of the oil change voucher.

In short, these results confirm, as predicted (H3), that bundle composition plays an important role in causing consumers to view multiple items as a single, inseparable "gestalt" unit. With evidence for a theoretically derived moderator, we next investigated a potential mediator: the desire to replace items lost from bundles (i.e., restoring the "whole").

Study 5: Mediation by the Need to Restore the "Whole"

We designed Study 5 to test the whether the perceived need to replace missing items mediates the effect of bundling on compensation demanded for losses (H4). We argue that the additional compensation demanded for losses from bundles (compared to losses in isolation) accrues from both the forfeiture of the lost item itself and the ruin of the "whole" of the bundle. Therefore, consumers facing losses from bundles (vs. in isolation) should believe they require more compensation because the "whole" has been compromised and, consequently, replacing the missing component—restoring the "whole"—is more important.

Specifically, Study 5 examined valuation of a travel bag, either offered as part of a bundle or offered separately. We predicted that the loss of the bag from a bundle would yield greater compensation demanded than would the loss of the same bag in isolation, while the addition of the bag to a bundle would yield lower WTP than would acquisition of the same bag separately. Moreover, we expected greater perceived need to replace the bag when it was missing from a bundle, compared to when the same bag was lost in isolation—and that this perceived need to replace the missing item (which facilitates restoration of the "whole" for bundles) would mediate the effect of bundling on compensation demanded for losses.

Method

We recruited 200 U.S.-based MTurk workers in exchange for $0.50. One hundred eighty-eight participants (M_{age} = 31.20, SD_{age} = 9.26; 71 females, 117 males) remained in the study after applying the exclusion criteria.

Study 5 employed a 2 (scenario: *lose* vs. *add*) × 2 (presentation: *bundled* vs. *separate*) between-subjects design. In the *lose* condition, we elicited compensation demanded for a loss,

either from a bundle or separately. In the *add* condition, we elicited WTP for a single item, either added to a bundle or added separately.

In the *lose* condition, participants imagined having already purchased, for a total price of $250, three suitcases—a small suitcase, a medium suitcase, and a large suitcase—either as a bundle or separately. The three suitcases in the *bundled* condition were presented together in a single image, while the three suitcases in the *separate* condition (which were identical to the three suitcases in the *bundled* condition) were presented separately in three different images. Participants read that one of the items (the small suitcase) was never delivered and subsequently unavailable. Participants then indicated the amount of compensation they believed they deserved ("I should receive a total of $_____").

Those in the *add* condition imagined purchasing two suitcases—a medium suitcase and a large suitcase—either as a bundle or separately. The two suitcases in the *bundled* condition were presented together in a single image, while the two suitcases in the *separate* condition were presented separately in two different images. Those in the *bundled* condition, after reviewing the first suitcase set, read that another suitcase set was also available and identical to the first suitcase set; however, it also included a small suitcase (the same small suitcase as in the *lose* condition). Participants indicated how much more they would be willing to pay for the second suitcase set than for the first suitcase set (i.e., WTP to add the small suitcase). Those in the *separate* condition, after reviewing the first two suitcases, read that a small suitcase was also available. Participants indicated how much they would be willing to pay for the small suitcase ("I would be willing to pay $_____ for the small suitcase").

Finally, in the *lose* condition, participants considered how important it would be to replace the missing item ("not at all important" = 1; "very important" = 7) and how unhappy they

would be with the company that failed to deliver the small suitcase ("not at all unhappy" = 1; "very unhappy" = 7). In the *add* condition, participants indicated how happy they would be with the company that sold the luggage ("not at all happy" = 1; "very happy" = 7).

Results and Discussion

Because the distribution of the raw valuation responses was significantly right-skewed ($\chi^2(2) = 127.32$, $p < .001$), we log-transformed WTP and compensation demanded. In the results that follow, we report the raw valuation responses, but perform our statistical tests on the log-transformed variables.

An ANOVA of valuation on scenario (*lose* vs. *add*) and presentation (*bundled* vs. *separate*) yielded a main effect of scenario ($F(1, 184) = 197.34$, $p < .001$), such that compensation demanded exceeded purchase prices. This pattern is consistent with loss aversion and previous research demonstrating the endowment effect, although we note that compensation demanded included both a refund and additional compensation for the unavailability and thus, was expected to be higher. There was no main effect of presentation ($F(1, 184) = 2.56$, $p = .111$).

More importantly, the ANOVA yielded the predicted (H1) two-way interaction ($F(1, 184) = 16.30$, $p < .001$; see Figure 1.5). Specifically, participants who lost the small suitcase from a bundle demanded more compensation (M = \$91.22, SD = \$45.04) than did participants who lost the small suitcase in isolation (M = \$78.26, SD = \$46.28; $F(1, 184) = 3.09$, $p = .080$). In contrast, participants who added the small suitcase to the bundle offered lower WTP (M = \$27.50, SD = \$14.45) than did participants who added the same suitcase separately (M = \$40.34, SD = \$22.14; $F(1, 184) = 15.28$, $p < .001$).

Next, in order to test our main hypothesis—that the greater compensation demanded for losses from bundles accrues from the ruin of the "whole" of the bundle—we analyzed desire to

replace the item for those in the *lose* condition. As predicted, participants who imagined losing the small suitcase from a bundle stated that replacing the item was more important (M = 5.78, SD = 1.28), compared to participants who imagined losing the small suitcase in isolation (M = 5.13, SD = 1.64; t(96) = 2.14, p = .035).

Furthermore, perceived importance of replacing the small suitcase mediated the effect of presentation condition (*bundled* vs. *separate*) on compensation demanded in the *lose* condition. Specifically, we conducted a mediation analysis using the bootstrap procedure, with 20,000 resamples (Preacher, Rucker, & Hayes, 2007; SPSS Macro PROCESS Model 4). Our model included presentation condition as the independent variable (*bundled* = 0; *separate* = 1), perceived importance of replacement as the mediator variable, and log-transformed compensation demanded as the dependent measure. As predicted, we found a significant indirect effect of perceived importance of replacement (indirect effect = –.04, *SE* = .03, bias-corrected 95% confidence interval = [–.121, –.004]). The *separate* condition significantly reduced perceived importance of replacement (a = –.65, p = .035), and perceived importance of replacement was significantly and positively associated with compensation demanded (b = .07, p = .016). Including perceived importance of replacement in the model significantly reduced the effect of presentation condition on compensation demanded (from c = –.17, p = .047 to c' = –.12, p = .140), suggesting full mediation. Notably, perceived importance of replacement and compensation demanded were distinct variables, only somewhat correlated (r(98) = .230, p = .022).

Finally, we also analyzed subjective experience ratings (i.e., unhappiness and happiness ratings; H2). As predicted, in the *lose* condition, participants who lost the small suitcase from a bundle were unhappier (M = 6.02, SD = .97) than were participants who lost the same suitcase

purchased separately (M = 5.26, SD = 1.48; t(96) = 2.94, p = .004). In the *add* condition, we did not observe a corresponding difference in happiness ($M_{bundled}$ = 5.26, $SD_{bundled}$ = .98; $M_{separate}$ = 5.16, $SD_{separate}$ = .86; t(88) = 0.52, p = .602), likely because this particular measure asked about happiness with the company offering the luggage, rather than with the overall acquisition experience (as in Study 3). Nevertheless, the observed difference between the *bundled* and *separate* conditions for the *lose* condition does replicate the pattern observed in Study 3.

These results reveal that the perceived importance of replacing a lost item mediates the effect of bundling on compensation demanded for losses (H4). With evidence that additional compensation demanded for losses from bundles accrues from both the forfeiture of the lost item itself and the dissolution of the "whole" of the bundle, we next tested a boundary condition to provide further evidence that the "gestalt" impression caused by bundling is the mechanism by which the asymmetry in valuation arises.

Study 6: Set Completion as a Boundary Condition

We designed Study 6 to test a boundary condition for our proposed asymmetry in valuation (H5). In particular, whenever the impression of a "whole" depends on the completeness of a set, consumers should value the "whole" of the set irrespective of whether items are offered as a bundle or separately, and the asymmetric effect of bundling on compensation demanded and WTP should be attenuated. Therefore, in Study 6, we manipulated whether a state of completion was an objective property of the target items. Specifically, participants considered purchasing baseball cards, which either formed a complete set (e.g., the baseball cards represented each player on a specific team) or did not form a complete set (e.g., the baseball cards represented the top players in the league). We predicted that the effect of bundling on valuation would persist only when the baseball cards did not form a complete set.

Method

We recruited 800 U.S.-based MTurk workers in exchange for $0.50. Seven hundred sixty-one participants (M_{age} = 34.42, SD_{age} = 11.28; 406 females, 354 males, one undisclosed) remained in the study after applying the exclusion criteria.

Study 6 employed a 2 (scenario: *lose* vs. *add*) × 2 (presentation: *bundled* vs. *separate*) × 2 (set relationship: *no-set* vs. *set*) between-subjects design. Participants read that they had purchased baseball cards as a gift for their nephew, either as a bundle or separately, and we described an opportunity to either sell one of the baseball cards or acquire an additional baseball card. We manipulated whether the baseball cards formed a complete set (such that losing a card would render the set incomplete and adding a card would complete the set) or consisted of unrelated players. The dependent variable of interest was valuation of a baseball card.

In the *no-set* condition, participants read that they had purchased a variety of baseball cards, either as a bundle ("the Top Stars Baseball Card Bundle") or separately ("a variety of baseball cards for the top players in the league"). In the *set* condition, participants read that they had purchased a set, either as a bundle ("the World Series Championship Complete Set") or separately ("a baseball card for each of the players on the World Series winning team").

Participants assigned to the *lose* condition considered selling one of the baseball cards and listed their WTA to sell a baseball card, either from a bundle or separately. Those in the *set* condition also read: "Selling a card would mean that one of the players on the World Series team would be missing (i.e., the set would be incomplete)." Participants assigned to the *add* condition considered purchasing an additional baseball card and listed their WTP to purchase a baseball card and either add it to a bundle or add it separately. Those in the *set* condition also read: "Suppose that before you give the gift to your nephew, you discover that one of the players on

the World Series team is missing (i.e., the set is incomplete). You have the opportunity to buy a replacement baseball card." All participants read that "baseball cards typically cost between $1–$10" and indicted their WTA or WTP on a 12-point scale ("less than $1.00" = 1; "$1.00" = 2; "$2.00" = 3; up to "$9.00" = 10; "$10.00" = 11; "more than $10.00" = 12).

Results and Discussion

An ANOVA of valuation on scenario (*lose* vs. *add*), presentation (*bundled* vs. *separate*), and set relationship (*no-set* vs. *set*) revealed a main effect of scenario ($F(1, 753) = 466.08$, $p < .001$), such that that WTA to sell a baseball card exceeded WTP to acquire a baseball card, consistent with loss aversion and previous research demonstrating the endowment effect. The ANOVA further revealed a main effect of set relationship ($F(1, 753) = 33.11$, $p < .001$), such that valuation in the *set* condition exceeded valuation in the *no-set* condition.

More importantly, as predicted (H5), the ANOVA also yielded a three-way interaction ($F(1, 753) = 3.81$, $p = .051$), confirming set completion as a boundary condition for the asymmetry in valuation (see Figure 1.6). Specifically, within the *no-set* condition, we observed a significant scenario (*lose* vs. *add*) by presentation (*bundled* vs. *separate*) two-way interaction ($F(1, 753) = 10.11$, $p = .002$), replicating the asymmetry in valuation (H1). Participants who sold a baseball card from a bundle demanded more compensation ($M = 11.42$, $SD = 1.79$) than did participants who sold a baseball card in isolation ($M = 9.93$, $SD = 3.21$; $F(1, 753) = 11.70$, $p < .001$). For acquisition, however, the pattern reversed, though not significantly so: Participants who added a baseball card to a bundle offered lower WTP ($M = 4.97$, $SD = 3.29$) than did participants who added a baseball card separately ($M = 5.45$, $SD = 3.69$; $F(1, 753) = 1.20$, $p = .274$). Critically, as predicted, within the *set* condition, we did not observe a scenario (*lose* vs. *add*) by presentation (*bundled* vs. *separate*) two-way interaction ($F(1, 753) = .19$, $p = .661$),

confirming that the asymmetric effect of bundling on valuation persisted only when the baseball cards did not form a complete set.

These results suggest that the asymmetry in valuation is attenuated when a state of completion is an objective property of the target items. In these contexts, consumers perceive a "whole" irrespective of whether the items are offered as a bundle or separately. Study 6, therefore, further suggests that the "gestalt" impression caused by bundling is the mechanism by which the asymmetry in valuation arises.

General Discussion

Products and services as diverse as clothes, television and Internet service, real estate, healthcare, books, cell phone plans, and even education are all offered as bundles, as well as separately (often simultaneously). Given the prevalence of bundling in the marketplace, understanding its psychological consequences is both theoretically and practically important. To that end, this research, which documents the asymmetry hypothesis in the valuation of bundles, advances the current literature on the psychology of bundling. In particular, we find that (1) consumers demand more compensation for and experience greater dissatisfaction from the loss of items from bundles, compared to the loss of the same items in isolation, and (2) consumers offer lower willingness-to-pay (WTP) for and experience less satisfaction from items acquired as or added to bundles, compared to the same items purchased separately.

This asymmetry in valuation persists because bundling leads consumers to see multiple items as a single, inseparable "gestalt" unit. Thus, consumers are reluctant to both remove items from and add items to bundles. Specifically, when losing an individual component from a bundle, consumers suffer not only the loss of the item itself, but also the ruin of the "whole" of

the bundle—and, hence, demand greater compensation. However, in acquisition, adding an additional component to a bundle alters and therefore compromises the preexisting "whole."

We examined the asymmetric effect of bundling on valuation across six studies. In these studies, we triggered the perception of a bundle by physically binding the items together (Study 1), placing the items in a container labeled as a bundle (Studies 2 and 3), displaying the items in close proximity (Study 5) and simply referring to a "bundle" (Studies 4 and 6). In addition to offering evidence for our hypotheses, we also ruled out alternative explanations. While, for example, pricing inferences in the marketplace could potentially explain the effect of bundling on valuation in acquisition, our asymmetry hypothesis accounts for the opposite patterns of valuation for losses. Further ruling out competing explanations based on pricing inferences, we documented the corresponding subjective experience of loss and acquisition (i.e., dissatisfaction and satisfaction), depending on whether items were offered as a bundle or separately.

Theoretical and Practical Implications

Prospect theory's most basic prediction is that losses loom larger than gains. Our paradigm allows us to test for loss aversion and, indeed, we consistently find that WTA is higher than WTP (regardless of whether items are bundled or presented separately), as work on the endowment effect suggests. Admittedly, our paradigm does not always provide a clean test of the disparity between WTA and WTP. For example, in Study 5, compensation for loss included both a refund and additional compensation for the unavailability.

Interestingly, in Study 2, we found evidence for the endowment effect in the *bundled* condition, but not in the *separate* condition. One possibility for this result is that people experience diminishing marginal sensitivity for losses and gains (Kahneman & Tversky, 1979). Therefore, when consumers hold multiple, separate items and buy or sell one item at the margin,

the endowment effect may be attenuated, compared to when consumers buy or sell a single item in isolation.

To examine this possibility, we conducted a posttest with 191 MTurk participants, based on the Study 2 procedure. We employed a 2 (scenario: *lose* vs. *add*) × 2 (quantity: *single unit* vs. *multiple units*) between-subjects design. Participants in the *lose* condition assumed that they had either one or four candy bars and listed their selling price (WTA) for a single candy bar (e.g., one of one vs. one of four). Participants in the *add* scenario assumed that they had either zero or three candy bars and listed their WTP for another candy bar (e.g., added to zero vs. added to three). Participants then indicated their valuation of the candy bar on a ten-point scale ("$0.00–$0.99" = 1; "$1.00–$1.99" = 2; up to "$9.00–$9.99" = 10). An ANOVA of valuation on scenario (*lose* vs. *add*) and quantity (*single unit* vs. *multiple units*) yielded a main effect of scenario, such that selling prices exceeded purchase prices ($F(1, 187) = 20.19$, $p < .001$), consistent with loss aversion, and a main effect of quantity (*single unit* vs. *multiple units*), such that valuation in the *single unit* condition exceed valuation in the *multiple units* condition ($F(1, 187) = 15.99$, $p < .001$). Critically, the ANOVA further yielded a two-way interaction ($F(1, 187) = 8.75$, $p = .003$). Specifically, in the *single unit* condition, we observed an endowment effect: WTA ($M = 3.09$, $SD = 1.70$) exceeded WTP ($M = 1.80$, $SD = .66$; $F(1, 187) = 28.50$, $p < .001$); however, in the *multiple units* condition, WTA ($M = 1.89$, $SD = 1.11$) and WTP ($M = 1.63$, $SD = 1.06$) were similar ($F(1, 187) = 1.15$, $p = .285$). It appears that the endowment effect can be attenuated when consumers hold multiple units and buy or sell one unit at the margin.

We conclude that differences in marginal utility, therefore, may account for the absence of an endowment effect in the *separate* condition of Study 2. We also note that this result is somewhat consistent with previous work demonstrating that the endowment effect is attenuated

for multiple-unit holdings (e.g., buying and selling 25 separate pieces of chocolate), compared to singleton holdings (e.g., buying and selling one box containing 25 chocolates; Burson, Faro, & Rottenstreich, 2013), although we tested losses *from* bundles, rather than losses *of* bundles.

A more important question might be whether prospect theory makes any prediction for the effect of bundling (vs. offering items separately). This comparison, after all, underlies our key prediction. We note that because both the gain and loss functions described by prospect theory display diminishing marginal sensitivity, it is possible that the loss of a single item from multiple items (i.e., from a bundle) and the addition of a single item to multiple items (i.e., to a bundle) are experienced farther from the relevant reference point (i.e., with diminished marginal sensitivity). This interpretation of prospect theory argues for a main effect of bundling: Consumers should pay more for an item in isolation, compared to the same item added to a bundle, and demand more for a loss in isolation, compared to the same loss from a bundle. Our results, however, demonstrate that this is not the case, and we provide evidence suggesting that consumers' "gestalt" impressions of bundles lead to the opposite prediction for losses.

Our results further diverge from the principles of hedonic editing, which describe how people might edit or parse multiple outcomes in a way maximizes happiness (Thaler, 1999; Thaler & Johnson, 1990). Specifically, the hedonic editing hypothesis suggests that people should (1) segregate gains, (2) integrate (or bundle) losses, (3) integrate (or bundle) smaller losses with larger gains, and (4) segregate smaller gains from larger losses. For example, suppose an appetizer, entrée, and dessert are purchased as a bundle, and the dessert is unavailable. Based on the third principle, a diner should be less upset (and, hence, demand less compensation), when a larger gain (i.e., the appetizer and entrée) is bundled with and, therefore offsets, the smaller loss (i.e., the dessert). However, this account overlooks the ruin of the "whole" of the bundle. As

such, our theorization predicts the opposite pattern of results for losses, compared to the hedonic editing hypothesis. Note that in acquisition, however, segregation of gains (i.e., the first of the hedonic editing principles) is consistent with our account—that consumers will offer lower WTP for separate, rather than bundled, items.

This work also yields meaningful practical insights for marketers, given the predominance of bundling as a marketing strategy (Estelami, 1999; Heeler, Nguyen, & Buff, 2007; Yadav, 1994). First, pricing decisions should be informed by this asymmetry in valuation. Second, to the extent that bundles are offered because marketers wish to entice consumers with discounts, firms should be aware that when a component of a bundle fails or is unavailable, consumers can become more dissatisfied and demand more compensation than those who experience identical losses for non-bundled products or services. Finally, it is worth noting that consumers sometimes prefer bundles, in part, because they communicate that the component items fit or belong together (i.e., they form a "whole"). Ironically, despite our finding that consumers expect to pay less for bundles, marketers should be cognizant of the fact that consumers may find them quite attractive—and hence, are reluctant to dissolve them.

Conclusion

In short, we find that while consumers demand more compensation for the loss of items from bundles, compared to the loss of the same items in isolation, they nevertheless offer lower WTP for items acquired as or added to bundles, compared to the same items purchased separately. This asymmetry in valuation persists because bundling causes consumers to perceive multiple items as a single, inseparable "gestalt" unit. Thus, for bundles, consumers both pay less and yet demand more. So, while the old adage *caveat emptor* ("buyer beware") is likely more familiar, for bundles, *caveat venditor* ("seller beware") might be more apt.

Chapter 2:

The Preference for Simultaneity:

When Different Events Happen to Different People at the Same Time

Abstract

We explore the preference for simultaneity, which we define as the preference for events that happen to the self and to close others to occur at the same time. We predict that people generally prefer simultaneity for both positive and negative events (e.g., two students would prefer to receive both good grades and bad grades on the same day), because simultaneity facilities social connection. To that end, we find that people choose simultaneity (Study 1), that this preference extends to negative events (Study 2), and that this preference is bounded by the emotional impact of those events, such that it systematically decreases as positive and negative events increase in magnitude (Study 3). The preference for simultaneity is further moderated and mediated by the desire to connect with others (Studies 4–5).

Picture yourself waiting to board a flight at the airport, economy ticket in hand. The gate agent announces your name and asks to see you at the counter: The airline is offering you a complimentary upgrade to first class. This is great news. Naturally, you text a close friend—who, as it happens, while flying through a different airport in a different city, had also been upgraded to first class (it appears you two are frequent flyers). Would you prefer if she had been upgraded that very same day, or if she had been upgraded three weeks ago? Now suppose, instead, that you have enough airline miles to upgrade yourself. Would you choose to fly first class on the same day or a different day as your close friend? Or imagine something less fortuitous, but arguably much more common: You both miss a flight. Would you prefer these events to occur on the same day or on different days?

In this research, we explore the preference for simultaneity, which we define as the preference for events that happen to the self and to close others to occur at the same time. We propose that simultaneity facilitates social connection, which people fundamentally and universally desire (Baumeister & Leary, 1995). Thus, even for events that happen to different people in different places—events that are otherwise entirely disconnected—simultaneity itself can create value and serve as a source of utility. So, in the above example, people might be happier with the first class upgrade, choose the first class upgrade, and even prefer to miss a flight on the same day as a close friend, rather than a different day.

A Preference for Simultaneity

A large body of work has examined how the timing of multiple events can affect subjective well-being. For example, people prefer event sequences that improve over time (Kahneman, Fredrickson, Schreiber, & Redelmeier, 1993; Loewenstein & Prelec, 1993; Ross & Simonson, 1991). Retrospective evaluations of experiences depend on the timing of the

individual moments that comprise them (e.g., the "peak-end rule"; Fredrickson & Kahneman, 1993; Kahneman, Fredrickson, Schreiber, & Redelmeier, 1993; Redelmeier & Kahneman, 1996). And people arrange events to either take advantage of or avoid contrast and assimilation effects between them (Kahn, Ratner, & Kahneman, 1997; Novemsky & Ratner, 2003; Ratner, Kahn, & Kahneman, 1999). Both happiness and unhappiness are also affected by the rate at which people hedonically adapt to events over time (Wilson, Meyers, & Gilbert, 2003).

Arguably the most prominent theory describing how the timing of multiple events can affect subjective well-being is the hedonic editing hypothesis (Thaler, 1985, 1999; Thaler & Johnson, 1990), which broadly asks whether people are happier when multiple events (e.g., winning a lottery, receiving a good grade, etc.) are temporally integrated (i.e., occur simultaneously) or segregated. Because the gain and loss functions of the prospect theory value functions are concave and convex, respectively (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992), people should segregate gains to maximize happiness (i.e., avoid decreasing marginal sensitivity) and integrate losses to minimize unhappiness (i.e., take advantage of decreasing marginal sensitivity). Yet evidence for the descriptive validity of this prediction has been mixed. For example, people generally tend to prefer when positive events occur on separate days, consistent with the hedonic editing hypothesis. However, people also tend to prefer when negative events occur on separate days, a pattern inconsistent with the hedonic editing hypothesis. Thaler and Johnson (1990) suggested that loss sensitization might explain the latter pattern (e.g., when two losses are experienced simultaneously, the first loss creates additional sensitivity to the second loss). Linville and Fischer (1991), meanwhile, argued that people maintain a limited emotional capacity to both savor gains and buffer losses (e.g., when two losses are experienced simultaneously, the first loss exhausts the loss buffering resources). Both

theories explain why subjective well-being might be higher when events that happen to just the self are segregated.

But do people also prefer segregating events that happen to the self and to close others? One possibility is that people simply treat events that happen to the self and to close others as if they happened to just the self. This prediction would be consistent with research demonstrating that interpersonal closeness causes people to perceive a cognitive overlap between the self and close others (Aron et al., 1991). Other work has described this overlap as "self-other merging" (Batson et al., 1997), cognitive interdependence (Kelley & Thibaut, 1978), and "oneness" (Cialdini et al., 1997). As a result, people believe they share the traits of close others (Aron et al., 1991; Goldstein & Cialdini, 2007), information held by close others (Wegner, Erber, & Raymond, 1991), and ownership over resources (Tu, Shaw, & Fishbach, 2015). Thus, people might be happier when segregating events that happen to the self and to close others, just as they are happier when segregating events that happen to just the self (Linville & Fischer, 1991; Thaler & Johnson, 1990).

However, this prediction overlooks the potential role of social connection when events that happen to the self and to close others occur at the same time. This notion that simultaneity might facilitate social connection is consistent with research documenting the various positive effects of sharing experiences with others. While this literature has not examined whether people value simultaneity for multiple events that happen to the self and to close others, it does suggest that people generally desire experiencing a single event with others (Baumeister & Leary, 1995; Gardner, Pickett, & Brewer, 2000; Gonzaga, Campos, & Bradbury, 2007; Murray et al., 2002). And a number of positive social consequences result. For example, sharing a single event with others enhances social relationships, confers social support (Schachter, 1959), creates bonds

between people (Abrams & Hogg, 1990; Clark & Kashima, 2007; Levine & Higgins, 2001), and causes them to feel more connected (Bhargave & Montgomery, 2013). Moreover, within a single event, when people coordinate their behavior through mimicry or temporal synchrony, they experience greater rapport, feelings of connectedness, affiliation, and liking (Chartrand & Bargh, 1999; Lakin & Chartrand, 2003; Miles, Nind, & Macrae, 2009).

We build on this research to propose that simultaneity yields many of the same positive outcomes, even when different events happen to different people. We suggest that simultaneity itself creates value and serves as a source of utility because it facilitates social connection. And social connection is a fundamental and universal human desire that confers many benefits (Baumeister & Leary, 1995; Clark & Reis, 1988; Maner, DeWall, Baumeister, & Schaller, 2007; Ryan & Deci, 2000). For example, social connection boosts self-esteem (Leary & Baumeister, 2000), increases happiness (Diener & Seligman, 2002), creates meaning (Heine, Proulx, & Vohs, 2006), and can even bolster physical health (Cacioppo & Patrick, 2008). We propose that because simultaneity facilities social connection, and social connection is desirable, people prefer events that happen to the self and to close others to occur at the same time. Thus, subjective well-being can be influenced by how events are temporally segregated or integrated across the self and close others.

Notably, sharing a single event with others (as in a shared experience paradigm) qualitatively differs from experiencing multiple, otherwise entirely disconnected events at the same time as others. In this research, we examine the preference for the latter, suggesting that many of the benefits accruing form shared experience (e.g., social connection) manifest even when multiple events happen to different people in different places. Thus, our prediction does

not require people to physically occupy the same space (or even be in contact with each other) when experiencing separate events at the same time. Simultaneity itself is a source of happiness.

When and Why the Preference for Simultaneity Arises

We predict that people will prefer simultaneity for everyday experiences. Our main hypothesis therefore states: *People prefer everyday events to happen to the self and to close others at the same time (i.e., simultaneously)*.

But, of course, there are limits. Specifically, some events might be too emotionally overwhelming to benefit from simultaneity because experiencing these events at the same time would exhaust the joint emotional resources of the self-other collective. In particular, the "renewable resources model" proposed by Linville and Fischer (1991) suggests that people possess limited, but renewable emotional resources for dealing with emotionally impactful events. So, for example, because experiencing one emotionally impactful event (e.g., an engagement to be married, a divorce) might exhaust a significant amount of emotional resources (i.e., a person can only savor or cope with so much), people would not be able to fully savor or cope with another emotionally impactful event (e.g., the birth of a child, a car accident) if it occurred simultaneously. This renewable resources account explains preferences for event timing for just the self, but if people treat the experiences of close others as their own (Aron et al., 1991), they may similarly lack the emotional capacity to experience significant events at the same time as others. Consequently, people should resist simultaneity for large magnitude events because they will be too emotionally overwhelming. Therefore, we propose the following boundary condition: *The preference for simultaneity decreases as the magnitude of events increases.*

Furthermore, a basic tenant of prospect theory is that losses loom larger than equivalent gains (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). For example, the prospect of losing $1,000 is more emotionally impactful than the prospect of gaining $1,000. The value function is steeper for losses than for gains. Therefore, because people are more sensitive to losses than to equivalent gains, the preference for simultaneity should disappear sooner (i.e., at lower magnitudes) for negative events than for equivalent positive events. For example, a person and her close friend might prefer to experience gains of $1,000 simultaneously because these events would probably not be emotionally overwhelming for the self-other collective. Here, simultaneity would create value by increasing social connection. However, because losses loom larger than equivalent gains, it is much more likely that experiencing two losses of $1,000 would be emotionally overwhelming for the self-other collective. Thus, the same two friends might not prefer to experience these equivalent losses simultaneously.

We further explore *why* people prefer simultaneity by documenting the psychological mechanism underlying this preference. We propose that people prefer simultaneity because it facilitates social connection, and social connection is desirable. Therefore, we predict: *The preference for simultaneity is both moderated and mediated by the desire to connect with others.*

Taken together, these hypotheses establish a fundamental theoretical insight regarding preferences for event timing. Critically, this predicted preference for integration of events that happen to the self and to close others stands in contrast to the documented preference for segregation of events that happen to just the self (i.e., the hedonic editing hypothesis; Linville & Fischer, 1991; Thaler & Johnson, 1990). That is, we propose that shifting from interpersonal preferences for event timing to intrapersonal preferences for event timing will yield the exact opposite pattern of results.

The Present Research

In order to test our account, we adopted the methodological approach employed by previous work examining the hedonic editing hypothesis. Specifically, we presented participants with different timing patterns (e.g., events that occur on the same day vs. events that occur on different days) and asked them to indicate which option they would prefer.

Across five studies, we test whether people prefer simultaneity for consequential outcomes (Study 1), whether this preference extends to negative events (Study 2), and whether this preference systematically decreases as positive and negative events increase in magnitude (Study 3). Finally, to document the psychological mechanism underlying the preference for simultaneity, we examined whether it is moderated and mediated by the desire to connect with others (Studies 4–5).

We sought to maximize power across all studies by targeting a minimum sample of 50 participants per cell for studies conducted on campus and 100 participants per cell for studies conducted online. Power analyses conducted in G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) for each study showed that based on the respective sample sizes and target alpha level (α = .05), power was sufficient across all studies (i.e., $\geq$ .80) to detect a small to medium effect (e.g., d = .40). Finally, for all studies, we also report every independent and dependent variable.

Study 1: The Preference for Simultaneity

We designed Study 1 to test whether people prefer simultaneity for consequential outcomes. Specifically, we offered pairs of friends the chance to win prizes (one for each friend) and measured whether they opted for delivery of their prizes on the same day or on different days. We told participants that delivery of the prizes on the same day (i.e., simultaneity) would require waiting a longer overall amount of time than would delivery of the prizes on different

days. As such, our experimental paradigm required participants to make a tradeoff between simultaneity and immediacy. We predicted that participants would be more likely than chance to opt for simultaneity (i.e., delivery on the same day) and incur an unnecessary delay.

Method

Participants. We recruited 100 undergraduate and graduate students (50 pairs) at the University of Chicago (M_{age} = 21.05; 53 females, 47 males) in exchange for candy at an on-campus dining hall.

Procedure. Study 1 employed a single-factor (prize: gift card vs. flash drive vs. notebook vs. water bottle) within-subjects design. We intended for the different prizes to serve as conceptual replications and did not predict differences in the preference for simultaneity by item. A research assistant approached pairs of friends sitting together and asked if they would be willing to complete a survey about various gifts. Each pair of friends worked together to complete a single survey. On the first page of the survey, the pair of participants designated one person as "Partner A" and one person as "Partner B." They then rated the attractiveness of four potential gifts (e.g., "A gift card to Starbucks," "A Kingston Digital 64 GB USB 3.0 flash drive," "A Field Notes brand notebook," and "A Klean Kanteen brand water bottle") on seven-point scales ("Not at all attractive" = 1; "Very attractive" = 7). Each pair of participants together agreed upon a single rating for each item.

In the second part of the study, participants read: "To thank you for completing this survey today, we will enter you and your partner into a lottery to actually win one of the following pairs of gifts (i.e., one for each of you)." Then, they viewed the image and description of four pairs of prizes: two $25 gift cards to Starbucks, two 64GB Kingston Digital USB 3.0 flash drives, two Field Notes brand steno notebooks, and two 40-ounce Klean Kanteen steel

water bottles. Participants further read that we would randomly select one pair of participants to win one pair of the four possible pairs of prizes and that: "If you and your partner are selected as winners, we will mail the pair of gifts to you in either one week or two weeks. We are interested in preferences for delivery timing, so you can choose to receive your gifts in the same week or different weeks." Each pair of participants then selected, for each pair of prizes, one of the following three delivery options: (1) "For this gift, we prefer that we each receive the items in the same week. Both of us will receive the gift in two weeks." (2) "For this gift, we prefer that we each receive the items in different weeks. Partner A will receive the gift in one week; Partner B will receive the gift in two weeks." (3) "For this gift, we prefer that we each receive the items in different weeks. Partner B will receive the gift in one week; Partner A will receive the gift in two weeks."

Thus, each pair of participants made a total four delivery choices (i.e., one for each of the four prizes), which they were free to split up however they wished (e.g., they could opt for the same delivery option for all four prizes, opt for one delivery option for half of the prizes and another delivery option for the other half of the prizes, etc.). Choice of the first delivery option (i.e., "same week") would reflect a preference for simultaneity, while choice of either the second or third delivery options (i.e., "different weeks") would not. Finally, participants listed an email address that we used to make arrangements for delivery of the gifts to the winners.

Results and Discussion

In order to test our main hypothesis, we compared the overall percentage of choices of the "same day" (i.e., simultaneity) option to 50% (i.e., no preference for simultaneity). As predicted, participants exhibited an overall preference for simultaneity ("same day" choice share: 67%), $\chi^2(1) = 21.78$, $p < .001$. This pattern held to varying degrees across prizes (see Table 2.1).

These results provide initial evidence for our main hypothesis: People prefer events with limited emotional impact to happen to the self and to close others at the same time (i.e., simultaneously), even when expressing this preference required incurring an unnecessary delay.

One consideration in light of these results is that fairness concerns might have increased the preference for simultaneity. It might not seem fair, for example, for one partner to enjoy the prize a week earlier than the other. We believe this alternative is unlikely for several reasons. First, the pairs of friends sitting together in an on-campus dining hall likely knew each other well and could freely discuss why it might make sense to advantage one partner over another (e.g., a student who just lost her flash drive might need a replacement more urgently than her partner). Second, each pair of participants made four delivery choices (i.e., one for each pair of prizes), which could have been evenly split between two people, such that one partner could have been advantaged for half of the choices and the other partner could have been advantaged for the other half of the choices. This type of allocation would have been fair and would not have required incurring an unnecessary delay. Third, previous research has found that people are willing to disadvantage themselves with an inequitable distribution to avoid wasting resources (i.e., avoid incurring an unnecessary delay; Choshen-Hillel, Shaw, & Caruso, 2015). Nevertheless, in the following studies, we measure preferences for the timing of outcomes in which fairness concerns are less important because events are unscheduled (e.g., when people receive speeding tickets, letters from friends, good news, etc.).

In Study 1, we used identical events (i.e., each pair of participants entered a lottery to win the same prize). But our theory also extends to negative events, events with significant emotional impact, and events that are not necessarily identical. Therefore, in Study 2 we sampled a wider range of experiences—both positive and negative, those with limited versus significant

emotional impact, and events that are not identical—to examine the breadth of the preference for simultaneity.

Study 2: The Preference for Simultaneity Extends to Negative Events

We designed Study 2 to test three predictions: (1) whether people prefer simultaneity for both positive events and negative events, (2) whether the preference for simultaneity decreases as the magnitude of events increases, and (3) whether, as the magnitude of events increases, the preference for simultaneity disappears sooner (i.e., at lower magnitudes) for negative events than for equivalent positive events.

In order to sample from a wide range of experiences, we adapted 24 events developed by Linville and Fischer (1991; we made minor changes to seven of these events, in order to make them more relatable to current undergraduate students, changing, for example, "stereo system" to "laptop"). These events were originally used to test implications of the hedonic editing hypothesis. Linville and Fischer (1991) asked people to indicate whether they would prefer these events, which happened to just the self, to occur simultaneously. We modified this paradigm to ask people to indicate, instead, whether they would prefer these events, happened to the self and to a close other, to occur simultaneously. Moreover, to replicate their original results, in a posttest, we also measured preference for simultaneity for just the self.

The events spanned four categories (e.g., small positive, large positive, small negative, and large negative) and three domains (e.g., academic, social, and financial). For each combination of valence, magnitude, and domain, we asked participants to imagine that one event happened to them and that another, different event (with the same combination of valence and magnitude) happened to a close other. We then measured preferences for event timing (i.e., whether participants preferred the events to occur on the same day or different days). We

predicted that participants would generally exhibit a preference for simultaneity, that this preference would extend to negative events, and that as the magnitude of events increased, the preference for simultaneity would disappear sooner (i.e., at lower magnitudes) for negative events than for equivalent positive events.

Method

Participants. We targeted 50 participants for this study. However, during the three-day data collection period, 82 undergraduate students (M_{age} = 20.05; 49 females, 33 males) at the University of Florida made appointments to participate in exchange for course credit.

Procedure. Study 2 employed a 2 (valence: positive vs. negative) × 2 (magnitude: small vs. large) × 3 (domain: academic vs. financial vs. social) within-subjects design. In the first part of the study, participants rated the desirability of 24 events (see Table 2), which we intended as a manipulation check for the valence condition (1 = "Very bad"; 11 = "Very good"). We presented these events in the same mixed order for each participant.

Next, participants identified a close other at school. We instructed participants to furnish several details about the person they identified (e.g., first name, gender, age, type of relationship, length of relationship, feelings of closeness). The majority of participants (56.1%) listed a friend, followed by a boyfriend/girlfriend (18.3%), roommate (18.3%), or another type of relationship (7.3%). In general, participants felt very close to this person (rated on a seven-point scale: M = 6.37, SD = .87) and had known this person for about four years (length of relationship: M = 52.65 months, SD = 61.51 months).

Finally, participants reviewed a series of scenarios in which one event would happen to them and another event (with the same combination of valence and magnitude) would happen to the friend they identified. Participants further read that these events would take place during the

same one-week period. They decided whether they preferred the events to occur on the same day (i.e., simultaneously) or on different days.

In total, participants made 12 timing decisions about when "Event A" and "Event B" would occur. Specifically, participants made a single decision for each combination of valence, magnitude, and domain (i.e., one decision for each row in Table 2). We randomized the order of these decisions for each participant. Furthermore, for each of these decisions, we counterbalanced whether the participant experienced "Event A" and the identified close other experienced "Event B" or the participant experienced "Event B" and the identified close other experienced "Event A." For each of the 12 timing decisions, participants answered: "Would you rather these two events occur on the same day of the week or different days of the week?" ("same day" vs. "different days").

Results and Discussion

We first analyzed the desirability ratings for each of the 24 events, which we intended as a manipulation check for the valence condition. A repeated measures ANOVA confirmed a main effect of valence, $F(1, 81) = 1100.96$, $p < .001$, such that participants rated positive events as more desirable ($M = 9.07$, $SD = 1.92$) than negative events ($M = 3.61$, $SD = 1.90$). There was no main effect of magnitude, $F(1, 81) = .05$, $p = .829$, likely because we included an equal number of positive and negative events that offset each other. We also found a two-way interaction between valence and magnitude, $F(1, 81) = 587.83$, $p < .001$. Consistent with loss aversion, the simple effect of magnitude for negative events, $F(1, 81) = 460.37$, $p < .001$ ($M_{large} = 2.50$, $SD_{large} = 1.65$ vs. $M_{small} = 4.73$, $SD_{small} = 1.42$) was stronger than the simple effect of magnitude for positive events, $F(1, 81) = 368.55$, $p < .001$ ($M_{large} = 10.19$, $SD_{large} = 1.44$ vs. $M_{small} = 7.94$, $SD_{small} = 1.65$).

In order to test our main hypotheses, we next analyzed the preference for simultaneity. First, we compared the overall percentage of choices of the "same day" (i.e., simultaneity) option to 50% (i.e., no preference for simultaneity). As predicted, participants exhibited an overall preference for simultaneity ("same day" choice share: 70%), $\chi^2(1) = 156.76$, $p < .001$. Next, we compared the percentage of choices of the "same day" (i.e., simultaneity) option to 50% for each combination of valence and magnitude (e.g., small positive, large positive, small negative, and large negative; see Figure 2.1). Again, in support of our hypothesis, participants exhibited a preference for simultaneity for small positive events (80%), $\chi^2(1) = 86.65$, $p < .001$, large positive events (75%), $\chi^2(1) = 62.50$, $p < .001$, and small negative events (75%), $\chi^2(1) = 60.50$, $p < .001$. We did not observe a preference for simultaneity for large negative events (50%), $\chi^2(1) = .02$, $p = .899$.

Next, we examined the preference for simultaneity at the participant level. Because each participant made 12 binary choices (e.g., "same day" vs. "different days"), we fit a random effects logistic regression with valence, magnitude, and the interaction thereof as the independent variables and the preference for simultaneity (coded as: "different days" = 0 and "same day" = 1) as the dependent variable. In estimating the regression, we observed the predicted negative effect of magnitude, $z = -5.70$, $p < .001$, such that participants preferred simultaneity more for small events than for large events. This result is consistent with the boundary condition we propose: The preference for simultaneity decreases as the magnitude of events increases. We also observed a significant two-way interaction between magnitude and valence, $z = 2.94$, $p = .003$. Decomposition of this interaction revealed a simple effect of magnitude for negative events, $\chi^2(1) = 32.46$, $p < .001$, such that participants preferred simultaneity more for small negative events (75%) than for large negative events (50%), but no simple effect of magnitude for positive

events, $\chi^2(1) = 1.50$, $p = .221$, for which participants preferred simultaneity equally for small positive events (80%) and large positive events (75%). This pattern is consistent with the prediction that as the magnitude of events increases, the preference for simultaneity disappears sooner (i.e., at lower magnitudes) for negative events than for equivalent positive events. We did not observe a main effect of valence, $z = 1.33$, $p = .183$.

These results provide further evidence that people prefer events with limited emotional impact (both positive and negative) to happen to the self and to close others at the same time and that this preference deceases as the magnitude of events increases.

Next, in order to contrast this preference for temporal integration of events that happen to the self and to close others with the established preference for segregation of events that happen to just the self (i.e., the hedonic editing prediction), we conducted a posttest with 223 U.S.-based Amazon Mechanical Turk (MTurk) workers ($M_{age} = 35.85$; 120 females, 103 males), based on the Study 2 procedure. We employed the exact same 2 (valence: positive vs. negative) × 2 (magnitude: small vs. large) × 3 (domain: academic vs. financial vs. social) within-subjects design, with the same set of events and procedure (see Table 2). However, rather than making 12 timing decisions for the self and a close other, participants made 12 timing decisions for just the self. In the posttest, we observed an overall preference for segregation ("same day" choice share: 45%), $\chi^2(1) = 24.11$, $p < .001$, which replicates the preference documented by Linville and Fischer (1991) and stands in contrast to the overall preference for temporal integration we observed in Study 2 ("same day" choice share: 70%), $\chi^2(1) = 156.76$, $p < .001$. Therefore, shifting from interpersonal preferences for event timing to intrapersonal preferences for event timing yields the exact opposite pattern of results.

In Study 2, we found initial support for three predictions: (1) people prefer simultaneity for both positive events and negative events, (2) the preference for simultaneity decreases as the magnitude of events increases, and (3) as the magnitude of events increases, the preference for simultaneity disappears sooner (i.e., at lower magnitudes) for negative events than for equivalent positive events. We note, however, that the events we tested in Study 2 were not objectively equivalent in magnitude and therefore do not provide the cleanest test of the third prediction. That is, while some scenarios explicitly manipulated magnitude (e.g., a poor grade worth 2% of the course grade vs. a poor grade worth 40% of the course grade; finding $5 vs. winning $250), others did not (e.g., pizza with friends vs. an invitation to live with friends). Explicitly equalizing the objective magnitude of each pair of positive and negative events would provide the cleanest test of the rate at which the preference for simultaneity decreases as event magnitude increases. We designed Study 3 to do exactly this.

Study 3: Losses Loom Larger in the Preference for Simultaneity

We designed Study 3 (preregistered at https://aspredicted.org/blind.php/?x=m3xq4f) to directly test whether the slope capturing the rate at which the preference for simultaneity decreases is steeper for negative events than for positive events. Specifically, participants in Study 3 indicated their preference for simultaneity when gaining or losing the exact same amounts of money as a close other. We predicted that for small amounts of money participants would prefer simultaneity, but that for large amounts of money, participants would no longer prefer simultaneity (replicating Study 2). We also predicted that as the magnitude of events increased, the preference for simultaneity would disappear sooner (i.e., at lower magnitudes) for negative events than for equivalent positive events.

Method

Participants. We opened a HIT for 200 assignments on MTurk. A total of 200 MTurk workers (M_{age} = 35.45; 109 females, 88 males, three undisclosed) participated in exchange for $0.33.

Procedure. Study 3 employed 2 (valence: gains vs. losses; between-subjects) × 6 (amount: $10 vs. $100 vs. $1,000 vs. $10,000 vs. $100,000 vs. $1,000,000; within-subjects) mixed design. In the first part of the survey, all participants identified and briefly described a close other: "Please identify someone you (1) consider a good friend, (2) do not live in the same city as, and (3) are not romantically involved with. Please describe any additional details about this person (optional)." All participants then read: "Suppose that you and [friend] each have an investment account. For each of the following, would you prefer that these events happened on the same day or different days?" Participants read: "Imagine that you and your friend each [gained/lost] [$10/$100/$1,000/$10,000/$100,000/$1,000,000]" (i.e., six separate questions for each of the six amounts, presented in ascending order). Then, in both conditions, for each amount, participants indicated whether they would prefer to experience the events on the "same day" or "different days."

Results and Discussion

We first analyzed the preference for simultaneity. As predicted, participants exhibited an overall preference for simultaneity ("same day" choice share: 66%), $\chi^2(1) = 60.17$, $p < .001$. Within each valence condition, we also compared the percentage of participants who selected the "same day" (i.e., simultaneity) option to 50% (i.e., no preference for simultaneity) for each of the six amounts (see Figure 2.2). For every amount within the gains condition ($10–$1,000,000), participants exhibited a preference for simultaneity, ps < .001. For only the $10 and $100

amounts within the losses condition, participants exhibited a preference for simultaneity, *p*s < .005.

Next, we examined the preference for simultaneity at the participant level. Because each participant made six binary choices (e.g., "same day" vs. "different days"), we fit a random effects logistic regression with valence, amount, and the interaction thereof as the independent variables and the preference for simultaneity (coded as: "different days" = 0 and "same day" = 1) as the dependent variable. In estimating the regression, we observed the predicted negative effect of amount, $z = -7.62$, $p < .001$, such that as amount increased, the preference for simultaneity decreased. This result is consistent with the boundary condition we propose: The preference for simultaneity decreases as the magnitude of events increases. Moreover, we observed a significant two-way interaction between magnitude and valence, $z = 2.70$, $p = .004$. Decomposition of this interaction revealed a simple effect of amount for negative events, $\chi^2(5) = 72.43$, $p < .001$, such that the preference for simultaneity systematically decreased as amount increased ($B = -.68$, $SE = .09$), and a weaker simple effect of amount for positive events, $\chi^2(5) = 14.30$, $p = .014$, such that preference for simultaneity systematically decreased as amount increased ($B = -.32$, $SE = .09$). This pattern is consistent with the prediction that as the magnitude of events increases, the preference for simultaneity disappears sooner (i.e., at lower magnitudes) for negative events than for equivalent positive events.

The results of Studies 1–3 provide convergent evidence suggesting that people prefer simultaneity for everyday experiences, that the preference for simultaneity decreases as the magnitude of events increases, and that this preferences disappears sooner (i.e., at lower magnitudes) for negative events than for equivalent positive events. We designed Studies 4–5 to identify the psychological mechanism underlying the preference for simultaneity.

Study 4: Moderation by Desire to Connect

We designed Study 4 to test whether the preference for simultaneity is moderated by the desire to connect. Studies 1–3 examined the preference for simultaneity among friends or close others who are naturally interested in connecting. In Study 4, we manipulated this desire to connect by requiring participants to express their preference for simultaneity when matched with a person whom they either liked or disliked. We then presented participants with positive and negative events with similar and relatively small magnitudes. We predicted that when paired with a counterpart whom they liked, participants would desire social connection and exhibit the preference for simultaneity. When paired with a counterpart whom they disliked, however, participants would not desire social connection and therefore not exhibit a preference for simultaneity.

Method

Participants. We opened a HIT for 200 assignments on MTurk. A total of 202 workers (M_{age} = 34.92; 84 females, 118 males) participated in exchange for $0.25.

Procedure. Study 4 employed a 2 (liking condition: like vs. dislike; between-subjects) × 2 (valence: positive vs. negative; within-subjects) × 3 (event: within-subjects) mixed design, in which participants considered whether they would prefer simultaneity for events that occurred to both the self and a person whom they either liked or disliked.

In the "like" condition, participants read: "Please identify a friend that you really like. Feel free to pick any person that you like for any reason (e.g., you two get along, he/she is nice or fun to be with, etc.)." In the "dislike" condition, participants read: "Please identify someone that you really do not like. Feel free to pick any person (e.g., coworker, neighbor, acquaintance, etc.) that you do not like for any reason (e.g., you two don't get a long, he/she isn't nice or fun to

be with, etc.).” Participants submitted a name in an open text field and then answered the following manipulation check: “How much do you like and want to connect with the person that you identified above?” (“Not at all” = 1 and “Very much” = 7).

All participants then reviewed six events, each of which appeared on separate pages, in a different random order for each participant. For each of the six events, participants imagined that the event happened to them and that the same event happened to the other person they identified: “Suppose that you and [other person] each: [Event].” We included three positive events and three negative events: “received separate promotions at your respective jobs;” “filed your taxes separately and received separate tax refunds;” “got upgraded to first class on separate flights in separate airports;” “were sick and had to miss work at your respective jobs;” “ended up in bad seats at different movie theaters;” and “missed separate flights in separate airports.” For each event, participants determined if they would prefer that the events occurred on the same day (i.e., simultaneously) or on different days.

Results and Discussion

We first examined the manipulation check. Confirming the effect of the manipulation, participants liked the person they identified more in the like condition ($M = 6.16$, $SD = .91$) than in the dislike condition ($M = 1.67$, $SD = 1.19$), $t(200) = 30.00$, $p < .001$.

In order to test our main hypothesis, we first analyzed the preference for simultaneity by comparing the percentage of choices of the “same day” (i.e., simultaneity) option to 50% (i.e., no preference for simultaneity). Replicating the results of Studies 1–3, participants in the like condition exhibited an overall preference for simultaneity (“same day” choice share: 68%), which was significantly higher than 50%, $\chi^2(1) = 81.33$, $p < .001$. Participants in the dislike

condition did not exhibit an overall preference for simultaneity ("same day" choice share: 26%), which was significantly lower than 50%, $\chi^2(1) = 140.70$, $p < .001$.

Next, we examined the preference for simultaneity at the participant level. Because each participant made six binary choices (e.g., "same day" vs. "different days"), we fit a random effects logistic regression with liking condition, valence, and the interaction thereof as the independent variables and the preference for simultaneity (coded as: "different days" = 0 and "same day" = 1) as the dependent variable. In estimating the regression, we observed the predicted significant positive effect of liking condition, $z = 7.65$, $p < .001$, such that participants in the like condition expressed greater preference for simultaneity than did participants in the dislike condition ($B = 2.43$, $SE = .32$). We further observed a significant simple effect of liking condition for each event (see Table 2.3). We did not observe a main effect of valence, $z = –.33$, $p = .744$, because these events were of similar and relatively small magnitudes, and we did not observe an interaction between liking condition and valence, $z = .92$, $p = .359$). These results suggest that when people lack the desire to connect, they do not desire simultaneity.

The results of Study 4 confirm that the desire to connect shapes the preference for simultaneity. Specifically, because simultaneity facilities social connection, and social connection is desirable, people prefer events that happen to the self and to close others to occur at the same time. Consequently, this preference does not extend to those with whom people do not desire social connection (i.e., people who are disliked). With evidence for a theoretically derived moderator, we designed Study 5 to test whether the desire to connect mediates the preference for simultaneity.

Study 5: Mediation by Desire to Connect

We argue that simultaneity is desirable because it increases social connection. Therefore, we designed Study 5 to test whether the preference for simultaneity among political allies (versus rivals) is mediated by the desire to connect. We manipulated desire to connect by requiring participants to express their preference for simultaneity when matched with a person who either shared or did not share the same political beliefs. We predicted that when paired with a counterpart holding the same political beliefs, participants would desire social connection and exhibit the preference for simultaneity. When paired with a counterpart holding the opposite political beliefs, however, we predicted participants would not desire social connection and therefore not exhibit a preference for simultaneity. We then presented participants with either a positive or negative event with similar and relatively small magnitudes and asked participants to indicate both the extent to which they preferred simultaneity and desired social connection with their counterpart.

Method

Participants. We opened a HIT for 200 assignments on MTurk. A total of 206 workers (M_{age} = 34.13; 108 females, 98 males) participated in exchange for $0.25.

Procedure. Study 5 employed a 2 (political beliefs: same vs. opposite) × 2 (valence: positive vs. negative) between-subjects design, in which participants considered whether they would prefer simultaneity for events that occurred to both the self and a person with either the same or opposite political beliefs.

In the "same" condition, participants read: "Picture someone, Person X, with the exact same political beliefs as you. Person X voted for the same candidate that you voted for in the last presidential election, and Person X holds the exact same position as you on every major political

issue." They then responded to the following prompt: "Please take a moment to describe some examples of political issues about which you and Person X would agree most strongly."

In the "opposite" condition, participants read: "Picture someone, Person X, with the exact opposite political beliefs as you. Person X voted for the opponent of the candidate that you voted for in the last presidential election, and Person X holds the exact opposite position as you on every major political issue." They then responded to the following prompt: "Please take a moment to describe some examples of political issues about which you and Person X would disagree most strongly."

We then asked participants: "How much do you desire feeling closer or more connected to Person X?" Participants responded using a seven-point scale (1 = "Not at all"; 7 = "Very much"). We then presented one of two events used in Study 4. In the positive valence condition, participants next read: "Suppose that you and Person X both got upgraded to first class on separate flights in separate airports. Would you prefer these events to occur on the same day or on different days?" In the negative valence condition, participants next read: "Suppose that you and Person X both missed separate flights in separate airports. Would you prefer these events to occur on the same day or on different days?" In both conditions, participants responded using a seven-point scale (1 = "Definitely different days"; 7 = "Definitely the same day"). Participants made only a single choice regarding their preference for simultaneity.

Results and Discussion

An ANOVA of the preference for simultaneity on valence, political beliefs condition, and the interaction thereof revealed no main effect of valence, $F(1, 202) = .60$, $p = .438$, a main effect of political beliefs condition, $F(1, 202) = 22.95$, $p < .001$, and no interaction, $F(1, 202) = .27$, $p = .603$. Participants preferred simultaneity more in the same political beliefs condition (M

= 4.69, *SD* = 1.38) than in the opposite political beliefs condition (*M* = 3.71, *SD* = 1.56). As in Study 4, we did not observe a main effect of valence because these events were of similar and relatively small magnitudes.

An ANOVA of desire to connect on valence, political beliefs condition, and the interaction thereof revealed no main effect of valence, $F(1, 202) = 1.49$, $p = .223$, a main effect of political beliefs condition, $F(1, 202) = 202.93$, $p < .001$, and no interaction, $F(1, 202) = .45$, $p = .505$. Participants expressed greater desire to connect in the same political beliefs condition (*M* = 5.13, *SD* = 1.43) than in the opposite political beliefs condition (*M* = 2.31, *SD* = 1.42).

We next conducted a mediation analysis to determine whether the desire to connect mediated the effect of political beliefs condition on the preference for simultaneity. We used the bootstrap procedure, with 20,000 resamples (Preacher, Rucker, & Hayes, 2007; SPSS Macro PROCESS Model 4). As predicted, the desire to connect significantly mediated the effect of political beliefs condition on the preference for simultaneity (indirect effect = .1.00, *SE* = .23, bias-corrected 95% confidence interval = [.572, 1.482], consistent with full mediation).

General Discussion

People often exhibit a preference for simultaneity. For example, moviegoers enjoy midnight premieres, which occur simultaneously at multiple venues. Protesters often coordinate rallies in multiple cities for the same day. People enjoy following Twitter updates from fellow fans while watching sporting events alone. In this research, we explain why: People prefer simultaneity because it facilities social connection.

We documented this preference across five studies, which demonstrated that people prefer simultaneity for consequential outcomes (Study 1), that this preference extends to negative events (Study 2), and that this preference systematically decreases as positive and negative

events increase in magnitude (Study 3). We also identified the psychological mechanism underlying the preference for simultaneity by demonstrating that it is moderated and mediated by the desire to connect with others (Studies 4–5).

Implications

To our knowledge, our theory is the first to offer an account describing whether, to what extent, and why people prefer that events that happen to the self and to close others occur simultaneously (i.e., at the same time). Unlike previous research testing the hedonic editing hypothesis (Thaler, 1985; Thaler, 1999), which finds that people tend to prefer segregating events that happen to just the self (see Study 2 posttest; Linville & Fischer, 1991; Thaler & Johnson, 1990), our work shows that interpersonal preferences for event timing actually follow the exact opposite pattern: People tend to prefer temporally integrating events that happen to the self and to close others (as long as these are everyday events with limited emotional impact).

Consequently, subjective well-being can be influenced by how events are temporally segregated or integrated across the self and close others. One potential interpretation of our framework, therefore, is that when arranging events for the self and close others, people negotiate a tradeoff between the utility provided by simultaneity for temporal sequencing (which increases social connection) and the disutility triggered by jointly experiencing high impact events (which exhausts emotional resources). Our work shows that people resolve this tension by exhibiting less preference strength for simultaneity as the magnitude of events increases. Simultaneity works best for everyday events because these events yield both high utility from social connection and low disutility from exhaustion of emotional resources. Luckily, everyday events are, by definition, experienced more frequently (i.e., every day). So simultaneity serves as an important source of everyday happiness.

Future work could identify other potential differences between interpersonal and intrapersonal preferences for event timing. For example, although individuals prefer event sequences that improve over time (Fredrickson & Kahneman, 1993; Kahneman, Fredrickson, Schreiber, & Redelmeier, 1993; Redelmeier & Kahneman, 1996), groups of people might prefer sequences of simultaneous events that decrease over time. The social connection facilitated by a significant shared experience might be most impactful when it occurs earlier in a sequence and thus can increase the utility of all subsequent events. And it is possible that social connection causes the first, rather than the last, event in a series to render the greatest emotional impact. This reasoning is consistent with work showing that when sharing a single event with others, social connection causes primacy to shape retrospective evaluations relatively more than recency (as compared to solo contexts; Bhargave & Montgomery, 2013; Bhargave & Montgomery, 2015). Thus, for simultaneity, a "peak-first rule" may prevail, rather than a "peak-end rule" (as with individuals; Kahneman, Fredrickson, Schreiber, & Redelmeier, 1993; Loewenstein & Prelec, 1993; Ross & Simonson, 1991).

Our work further builds upon the literature exploring shared experience. In particular, this literature finds that people generally desire sharing a single event (Baumeister & Leary, 1995; Gardner, Pickett, & Brewer, 2000; Gonzaga, Campos, & Bradbury, 2007; Murray et al., 2002). We, on the other hand, examine situations in which multiple people experience multiple events at the same time (i.e., simultaneously). Yet we find that many of the positive social consequences that result from sharing a single experience extend to simultaneously experiencing separate events. To that end, our work is the first to show that simultaneity itself can create value and serve as a source of utility—even for events that happen to different people in different places, events that are otherwise entirely disconnected. Future work could examine whether and to what

extent the events themselves are directly affected by simultaneity. For example, in the same way that sharing a single event with others can enrich retrospective evaluations (Ramanathan & McGill, 2007), increase the intensity of positive experiences (Boothby, Clark, & Bargh, 2014), and amplify emotion (Shteynberg et al., 2014), it could be the case that simultaneously experiencing multiple events might also improve the events themselves.

We also note that while we did not test different combinations of magnitude and valence, it is possible that events that are misaligned with respect to valence or magnitude might not benefit from simultaneity. For example, simultaneously experiencing events with different valences (e.g., positive vs. negative) might introduce a sense of competition. If a student received an excellent grade on an exam and her close friend received a poor grade on an exam, the former student might feel worse than she otherwise would (and the latter student's success might be spoiled by her friend's negative outcome). Similarly, simultaneously experiencing events with different magnitudes (e.g., large vs. small) might give rise to social comparison. If a student received an excellent grade on an exam and her close friend received an excellent grade on a minor homework assignment, the former event might trivialize the latter by comparison. Both of these dynamics could potentially undermine the utility provided by simultaneity. To that end, testing different combinations of magnitude and valence represents an important potential direction for future research.

This research also offers numerous practical implications. Although we primarily examined events that people are largely unable to schedule for themselves (e.g., missing a flight, winning a lottery, accidentally damaging a laptop), firms and organizations have broad latitude to schedule events in the marketplace. For example, retailers shipping packages to multiple recipients often prioritize immediate delivery, but many people might actually be happier with

coordinated delivery. Imagine someone is sending gifts to friends in a bridal party. She might wish to schedule each delivery for the same day (so recipients can enjoy their gifts simultaneously), even if some recipients live closer and could receive their gifts earlier. Similarly, charity and event organizers might draw more participants if they planned, for example, marathons or alumni association gatherings in different locations for the same day. Our research suggests that in each of these cases, the simultaneity itself could represent an important and untapped source of happiness.

Chapter 3:

Bundles “Bundle” People

Abstract

In this research, we offer initial evidence suggesting that when consumers purchase and consume bundles together, they themselves feel more connected to each other. Across four studies, we find that in social consumption settings people are more likely to choose bundles over superior items offered separately and anticipate that consuming and purchasing bundles with others leads to greater social connection. We further demonstrate in a field setting that this preference for bundles is moderated by the desire to connect. These findings shed light on otherwise non-normative preferences in social consumption settings and yield a number of important implications for marketers.

In many social consumption settings—when colleagues dine together at restaurants, when families take trips to vacation resorts, when friends attend concerts with each other—firms can either charge a single price for the whole group or separate prices for each individual. Strictly speaking, and holding overall costs constant, differences in these pricing presentations are economically inconsequential (e.g., charging $10 per person for five people is no different than charging $50 for the whole group). But is it possible that these differences might nevertheless be *socially* consequential?

In this research, we propose that when consumers purchase bundles together (e.g., paying a single price for multiple people, rather than paying separate prices for each person) or consume bundles together (e.g., when multiple items for multiple people are combined in the same package, rather than offered in separate packages), they themselves feel more connected to each other. For example, some restaurants require that large parties pay a single overall price at the end of the meal (i.e., the effectively sell the group a bundle), while other restaurants will split the bill into separate checks for each person. Some amusement markets sell family passes (e.g., charging a single price for the entire family), while others demand separate tickets for each visitor. Restaurants ranging from pastry shops to sushi joints will either offer multiple items in the same package (e.g., doughnuts in the same box, maki rolls in the same container) or wrap these same foods individually. In each of these cases, consumers either purchase or consume bundles with each other, or they purchase or consume the same items offered separately.

We propose that in these situations, consumers will feel more connected to each other when they purchase or consume bundles together. This is an important downstream consequence because people generally desire social connection (Abrams & Hogg, 1990; Levine & Higgins, 2001; Schachter, 1959). To that end, our account suggests that bundles can potentially offer

social value above and beyond their economic value. Thus, to the extent that bundling can facilitate interpersonal closeness, which people desire, consumers should prefer bundles in these contexts, all else equal. More broadly, understanding these social consequences, therefore, is critical to understanding preferences in social consumption settings.

In the following sections we explain how, exactly, bundling facilitates social connection, outline our hypotheses, and offer four studies testing the theory that bundling increases social connection. Finally, we discuss implications for marketing practice that further underscore how bundling can be used to create additional value for consumers.

Theoretical Background

We define bundling as the practice of marketing or packaging two or more items as a single set, often for a single price (Guiltinan, 1987). Bundling is frequently employed as a price discrimination mechanism when firms face heterogeneity in preferences. To that end, extant literature has explored implications for customer segmentation, tie-in strategies, consumer welfare effects, and antitrust issues (e.g., Adams & Yellen, 1976; Burstein, 1960; Dansby & Conrad, 1984; Schmalensee, 1982; Telser, 1979). We note, however, that this worked has largely focused on pricing strategy from the perspective of the firm.

To the extent that the psychology of bundling from the perspective of the *consumer* has been studied, this literature has similarly focused on pricing—in particular, how consumers are sensitive to the way prices are allocated across the different components of a bundle (i.e., price partitioning) and how consumers are sensitive to where the discount that typically accompanies a bundle is applied. For example, previous work has examined price discount framing effects (Janiszewski & Cunha, 2004), demonstrating that consumers prefer bundles for which low-benefit components are priced less than high-benefit components (Hamilton & Srivastava, 2008).

Purchase likelihood also increases when discounts are framed as savings on relatively hedonic components of bundles, rather than as equivalent savings on utilitarian components (Khan & Dhar, 2010). Additionally, partitioning the prices of multicomponent bundles can improve purchase intentions by increasing the salience of benefits (Chakravarti et al., 2002) and reducing recall of total costs (Morwitz et al., 1998).

While this research has examined numerous monetary features of bundles, we highlight and further explore a critical *nonmonetary* feature: Bundles form a gestalt. Specifically, we build on recent work demonstrating that bundling leads consumers to see multiple items as a single, inseparable gestalt unit (Shaddy & Fishbach, 2017). This perception of bundles as *other than* (and sometimes greater than) the sum of their parts yields a number of implications for decision making. For example, because consumers resist compromising these gestalt impressions of bundles as distinct "wholes," bundling increases compensation demanded for losses (relative to losses of the same items presented separately) and decreases willingness to pay in acquisition (relative to acquisition of the same items presented separately). Consumers will also choose inferior bundles (i.e., those offering fewer benefits) over objectively superior bundles (i.e., those offering more benefits) when the inferior bundles trigger strong positive gestalt impressions (Weaver, Garcia, & Schwarz, 2012). And consistent with these findings, consumers exhibit a preference for bundled sets that exhibit a high sense of "fit" (Evers, Inbar, & Zeelenberg, 2014).

One important implication of these gestalt impressions of bundles is that their components are perceived as fundamentally connected. When a restaurant offers a prix fixe menu, for example (i.e., charging a single price for multiple courses), consumers perceive the meal as an integrated "whole," rather than as a collection of individual elements (e.g., an appetizer, entree, and dessert). When bundled, the same appetizer, entrée, and dessert cohere to

form a single, inseparable gestalt unit. Consistent with this account, we propose that when consumers purchase and consume bundles with each other—when they share parts of what they perceive to be the same "whole"— they themselves will also feel connected to each other. In other words, the connection among the items serves to symbolically connect consumers, as well.

And this is a good thing for consumers. A large literature has documented how and why interpersonal closeness is desirable (Baumeister & Leary, 1995; Ryan & Deci, 2000). For example, social connection has been associated with higher self-esteem (Leary & Baumeister, 2000), greater happiness (Diener & Seligman, 2002), and even improved health (Cacioppo & Patrick, 2008). To that end, people who experience social *dis*connection actively try to alleviate the resulting discomfort of isolation (Maner, DeWall, Baumeister, & Schaller, 2007).

These findings suggest that people generally desire social connection, and in this research we propose that bundling can facilitate interpersonal closeness. Therefore, in social consumption settings, when consumers maintain the desire to connect, we predict both that people will exhibit a greater preference for bundles than for the same items offered separately and anticipate feeling more connected to others when they purchase or consume bundles with each other.

The Present Research

Our first hypothesis examines the preference for bundles in social consumption settings:

H1: In social consumption settings, people will exhibit greater preference for bundles, compared to the same or similar items offered separately.

We explain that people maintain this preference because consumers anticipate experiencing increased feelings of closeness when purchasing or consuming bundles with each other. Therefore, we test the hypothesis that when consumers purchase bundles together (e.g., paying a single price for multiple people, rather than paying separate prices for each person) and

consume bundles together (e.g., when multiple items for multiple people are combined in the same package, rather than offered in separate packages), they will anticipate feeling more connected to each other:

H2A: Purchasing bundles with others increases interpersonal connection, relative to purchasing the same items offered separately.

H2B: Consuming bundles with others increases interpersonal connection, relative to consuming the same items offered separately.

One important distinction to note here is that consuming or purchasing a bundle with another person might be construed as sharing. And sharing food, in particular, can lead to a host of positive outcomes for consumers. For example, previous research has shown that sharing with others can increase trust (Woolley & Fishbach, 2016) and facilitate bonding (Fischler, 2011). We point out, however, that we examine situations in which people do need to physically share a single item (e.g., the same plate of food). We predict that bundles will increase closeness even when two separate items (e.g., two separate meals for two separate people) are purchase or consumed, as long as these items are offered as a bundle (i.e., presented as a single unit, for a single price). In these situations, even for two separate items, bundling causes people to mentally share (rather than physically share) what is perceived to be the same "whole," and this increases interpersonal connection.

Finally, to offer additional process evidence for our theoretical account, we test whether the desire to connect with others moderates the focal effect. Specifically, we predict that when people maintain an increased desire for social connection, they should similarly exhibit an increased desire for bundles.

H3: The preference for bundles is moderated by the desire to connect with others, such that consumers will prefer bundles more in situations where they experience a greater desire for social connection.

We tested these hypotheses across four studies, manipulating whether items were offered as a bundle or offered separately. In Study 1, we examine the preference for bundles in a consequential choice paradigm. In Studies 2–3, we test whether purchasing and consuming bundles with others increases anticipated interpersonal connection. And finally, in Study 4, which we conducted in a field setting, we determine whether the desire to connect moderates the preference for bundles, as suggested by our theoretical account.

Study 1: The Preference for Bundles

We designed Study 1 to test whether people will choose bundles in social consumption settings. Specifically, we predicted that people would choose bundles more frequently than similar (and superior) items offered separately (H1).

Method

We recruited 198 undergraduate and graduate students (i.e., 99 pairs; M_{age} = 28.06; 89 females, 109 males) in an on-campus dining hall at a private Midwestern university. Each participant was offered a $1 Amazon.com credit as compensation. Study 1 employed single factor (presentation: *bundled* vs. *separate*) between-subjects design.

A research assistant approached pairs of participants sitting together and asked them whether they would be interested in completing a study together. We told participants that we were interested in understanding teamwork. After agreeing to participate, we asked each pair of participants to work together to complete a simple word search puzzle. We recorded their start time and completion time in order to reinforce the notion that we were interested in the

understanding the performance of the team. We thought that completing this competitive task together would increase (or at least make salient) the desire for interpersonal connection, given that each pair of participants would be evaluated based on the performance of the team.

After each pair of participants completed the word search puzzle, the research assistant presented a pair of pens and offered to exchange the pair of pens for the two $1 Amazon.com credits that each pair of participants received at the outset of the study. Depending on condition, these two pens were either packaged together as a bundle or packaged separately (see Figure 3.1). Each pair of participants then jointly decided whether they would keep their two $1 of Amazon.com credits or exchange them for the pair of pens. We did not allow only a single person within each pair to exchange their $1 Amazon.com credit for a pen; the exchange could only be made for both participants or neither of them.

Results and Discussion

As predicted (H1), participants were more likely to choose the two pens over the two $1 Amazon.com credits when the pens were presented as a bundle (90%), compared to when the pens were presented separately (70%; $\chi^2(1) = 6.02$, $p = .014$). This result provides initial evidence suggesting that people maintain a preference for bundles.

To compare this preference for bundles in a social setting to the same preference in a non-social setting, we recruited 100 U.S.-based Amazon Mechanical Turk (MTurk) workers ($M_{age} = 34.46$; 40 females, 59 males, 1 other) in exchange for $0.15. We presented participants with the images of the stimuli used in Study 1 (see Figure 3.1) and asked participants to estimate the price of both types of pens (i.e., the bundled pens and the separate pens) in open text fields ("What do you think is the total retail price of the above two pens?") and indicate which they preferred ("If you could receive either option below for free (each option contains two pens),

which would you prefer?"). We counterbalanced the presentation order of both types of pens. Prior to analyzing the valuation data, we removed three outliers. We defined an outlier as any observation exceeding the predetermined cutoff of three standard deviations above the mean for each product. Participants estimated that the separate pens were more expensive (M = \$5.71, SD = \$3.09) than the bundled pens (M = \$4.36, SD = \$2.48; $t(96) = 9.42$, $p < .001$) and preferred the separate pens (60%) to the bundled pens (40%; $\chi^2(1) = 4.00$, $p = .046$). Thus, while pairs of participants preferred the bundled pens, individual participants preferred the separate pens and thought the separate pens were more expensive (the retail price of the separate pens was approximately double the retail price of the bundle pens at the time of the study).

These findings suggest that people maintain a preference for bundles in social consumption settings. We explain that this preference stems from anticipation that purchasing and consuming bundles with others increases interpersonal connection, which is desirable. To that end, we designed Studies 2–3 to test this prediction.

Study 2: Purchasing Bundles With Others ("The Venmo Effect")

We designed Study 2 to test whether purchasing bundles with others increases anticipated interpersonal connection, relative to purchasing the same items offered separately. Specifically, we predicted that when consumers imagined paying a single price for multiple people, rather than paying separate prices for each person, they would feel more connected to each other (H2A).

Method

We recruited 226 MTurk workers (M_{age} = 35.66; 138 females, 88 males) in exchange for \$0.50. Study 2 employed 2 (presentation: *bundled* vs. *separate*; between-subjects) × 3 (scenario: *vacation* vs. *concert* vs. *dinner*; within-subjects) mixed design.

All participants first identified three friends: “Please identify three friends with whom you would be willing to (1) go to dinner, (2) go to a concert, and (3) go on vacation.” They then actually imagined going to dinner (e.g., “Imagine that you and several friends went to a nice dinner together”), attending a concert (e.g., “Imagine that you and several friends are planning to go to a concert together”), and renting a vacation house (e.g., “Imagine that you and several friends went on a trip together and rented a house”) with those friends. These scenarios were presented in random order for each participant, and, for each scenario, participants imagined either paying a single price for multiple people and splitting the cost with Venmo (i.e., a mobile payment app; the *bundled* condition) or paying separate prices for each person (the *separate* condition).

In the *vacation* scenario, the *bundled* condition read: “The rental website charges a single group rate for the house, and one of your friends pays the fee. Then, at the same time, you each pay your share of the group rate by sending a payment via Venmo (a mobile payment service that you often use with your friends).” The *separate* condition read: “The rental website charges an individual rate for each person staying in the house, so you each separately pay your own fee.” Participants then answered: “Given that the rental website charged a single overall price for the group stay/separate prices for each person's stay]: At that moment, how connected would you feel to your friends?” (“Not at all connected” = 1; “Very connected” = 7.)

In the *concert* scenario, the *bundled* condition read: “One of your friends purchases a single group pass that grants you and your friends admission to the concert. Then, at the same time, you each pay your share of the group pass by sending a payment via Venmo (a mobile payment service that you often use with your friends).” The *separate* condition read: “Each of you separately purchases an individual pass that grants admission to the concert.” Participants

then answered: “Given that the venue charged a single overall price for the group pass/separate prices for each person’s pass]: At that moment, how connected would you feel to your friends?” (“Not at all connected” = 1; “Very connected” = 7.)

In the *dinner* scenario, the *bundled* condition read: “At the end of the meal, the waiter brings your group a single check, and one of your friends pays the bill. Then, at the same time, you each pay your share of the bill to your friend by sending a payment via Venmo (a mobile payment service that you often use with your friends).” The *separate* condition read: “At the end of the meal, the waiter brings each of you your own check, and you each separately pay your own bill.” Participants then answered: “Given that the restaurant charged [a single overall price for the group meal/separate prices for each person’s meal]: At that moment, how connected would you feel to your friends?” (“Not at all connected” = 1; “Very connected” = 7.)

Results and Discussion

As predicted (H2A), a mixed ANOVA revealed a main effect of presentation condition ($F(1, 224) = 7.37$, $p = .007$), such that participants felt more connected to their friends in the *bundled* condition than in the *separate* condition. We did not observe a main effect of scenario ($F(2, 448) = .823$, $p = .440$). We also observed an interaction between presentation condition and scenario ($F(2, 448) = 4.47$, $p = .012$). To decompose this interaction, we examined the simple effect of presentation condition for each scenario, all of which were directionally consistent with the hypothesis (see Figure 3.2). In the *vacation* scenario, anticipated connectedness was higher in the *bundled* condition ($M = 5.68$, $SD = 1.27$) than in the *separate* condition ($M = 4.99$, $SD = 1.64$; $F(1, 224) = 12.35$, $p = .001$). In the *concert* scenario, anticipated connectedness was higher in the *bundled* condition ($M = 5.54$, $SD = 1.30$) than in the *separate* condition ($M = 5.05$, $SD = 1.55$; $F(1, 224) = 6.43$, $p = .012$). And in the *dinner* scenario, anticipated connectedness was

higher in the *bundled* condition ($M = 5.34$, $SD = 1.44$) than in the *separate* condition ($M = 5.13$, $SD = 1.46$), but not significantly so ($F(1, 224) = 1.27$, $p = .261$).

We should note that because participants identified three friends at the outset of the study (i.e., before being assigned to condition), differences in the types of people that participants would share costs with cannot explain the pattern we observed. Moreover, in each scenario, participants either paid their friend immediately or paid the vendor immediately, limiting potential confounds related to inferences about trustworthiness (i.e., it is possible that sharing a cost creates trust—and therefore closeness—while people wait for repayment). Finally, we also asked participants to indicate how connected they would feel at the moment they discovered the pricing policy of the vendor. Thus, in each scenario, people did not choose for themselves whether they would pay for a bundle or pay separately. Ratings of anticipated interpersonal connection, therefore, reflected responses to simply learning that they would purchase a bundle or not.

With evidence for the prediction purchasing bundles together (e.g., paying a single price for multiple people, rather than paying separate prices for each person) increases anticipated interpersonal connection, we next tested whether consuming bundles together (e.g., when multiple items for multiple people are combined in the same package, rather than offered in separate packages) yields a similar effect.

Study 3: Consuming Bundles With Others

We designed Study 3 to test a wider range of scenarios and examine whether the effect extends not only to the purchase of bundles (as in Study 2), but also to the consumption of bundles. Specifically, we predicted that when multiple items for multiple people are combined in the same

package, rather than offered in separate packages, consumers will feel more connected to each other (H2B).

Method

We recruited 217 MTurk workers (M_{age} = 33.82; 124 females, 92 males, 1 other) in exchange for $0.50. Study 3 employed 2 (presentation: *bundled* vs. *separate*; within-subjects) × 4 (scenario: *doughnuts* vs. *chocolates* vs. *luggage tags* vs. *watches*; between-subjects) mixed design.

We presented each participant with one of the following four scenarios: (1) eating doughnuts (e.g., "Suppose that you are meeting a friend in the morning. You plan to eat two doughnuts together"), (2) visiting a chocolate shop (e.g., "Suppose that you and a friend visit a gourmet chocolate shop and purchase four chocolate truffles (i.e., two each) to eat together"), (3) receiving luggage tags as gifts (e.g., "Suppose you and your significant other received customized matching luggage tags as a gift"), or (4) receiving watches as gifts ("Suppose you and your significant other recently asked for matching watches, and you received them as a gift).

Within each scenario, we told participants that multiple items for multiple people could be combined in the same package (the *bundled* condition). We also told participants that multiple items for multiple people could be offered in different packages (the *separate* condition). Importantly, we presented images of the exact same product in both conditions. Only their presentation as a bundle or separate entities differed (see Figure 3.3). For both the *bundled* condition and *separate* condition, each participants answered: "How close would you feel to your [friend/significant other]?" Because each participant viewed both the *bundled* condition and *separate* condition, participants responded to this question twice, using a seven-point scale for each ("Not at all connected" = 1; "Very connected" = 7).

Results and Discussion

As predicted (H2B), a repeated measures ANOVA revealed a main effect of presentation condition ($F(1, 213) = 83.80$, $p < .001$; see Figure 3.4), such that participants felt closer to their friend or significant other in the *bundled* condition than in the *separate* condition. We also observed a main effect of scenario ($F(1, 213) = 3.96$, $p = .009$). We did not observe a significant interaction between presentation condition and scenario ($F(3, 213) = 1.62$, $p = .186$). Moreover, the simple effect of presentation condition was significant for each scenario: *doughnuts* ($F(1, 213) = 13.53$, $p < .001$), *chocolates* ($F(1, 213) = 13.78$, $p < .001$), *luggage tags* ($F(1, 213) = 41.13$, $p < .001$), and *watches* ($F(1, 213) = 20.39$, $p < .001$).

These initial studies provide evidence suggesting that people both prefer bundles in social consumption settings and that bundling can increase anticipated interpersonal connection, relative to consuming and purchasing the same items offered separately. We further propose that this preference arises precisely because people desire social connection. To that end, we designed Study 4 to shed additional light on this mechanism.

Study 4: Moderating the Preference for Bundles

We designed Study 4 to test whether the preference for bundles is moderated by the desire to connect with others (H3). We used a natural manipulation of desire to connect with others—the salience of the Valentine's Day holiday—and predicted that in the week preceding Valentine's Day, people would be more likely to choose a bundle to consume with a significant other, compared to the week following Valentine's Day. In the week preceding Valentine's Day, we anticipated that people in relationships would maintain the goal to increase interpersonal closeness with their relationship partners. In a week after Valentine's Day, we anticipated that this goal would be less salient.

Method

We recruited 343 undergraduate and graduate students (M_{age} = 22.39; 193 females, 145 males, 5 other) in an on-campus dining hall at a private Midwestern university. Each participant was offered candy (Reese's peanut butter cups) as compensation. Study 4 employed single factor (week: *Valentine's Day* vs. *control*) between-subjects design.

A research assistant approach potential participants and asked if they would be willing to complete a short survey on an iPad. The first page of the survey contained a series of questions that were intended to serve as a screener (unbeknownst to participants). After answering several decoy questions (e.g., "How long have you lived in Chicago?"), participants indicated whether they were currently in a relationship (e.g., "Are you currently in a relationship?"). Those who responded affirmatively to this latter question were directed to the current study. Those who indicated that they were not currently in a relationship were redirected to an unrelated study. In the *Valentine's Day* week condition, participants were recruited in the week preceding Valentine's Day (including on Valentine's Day itself). In the *control* week condition, participants were recruited during a one-week period after Valentine's Day.

In the first part of the study, we asked those in the *Valentine's Day* week condition if they were aware the Valentine's Day was in less than a week (on Valentine's Day itself, we modified this language to ask if participants were aware that Valentine's Day was "today"). We intended for this question to increase the desire for interpersonal connection by making salient information about the timing of a holiday that is highly relevant to those in relationships. To that end, the survey page containing this question also contained imagery related to Valentine's Day (see Figure 3.5). In the *control* week condition, we did not ask participants any questions about Valentine's Day, and we did not expose participants to any imagery related to Valentine's Day.

Next, in both conditions, participants read: "As a token of our appreciation for your participation in this survey, we'd like to give you and another person of your choosing a gift. Would you prefer two Reese's peanut butter cups wrapped together in the same package? Or would you prefer two Reese's peanut butter cups wrapped separately? (Note that these peanut butter cups are all the same size.)" Participants then made a selection (see Figure 3.6), identified the person whom they would give their second Reese's peanut butter cup to, and indicated whether they would see their relationship partner sometime in the next two weeks. After completing the survey, participants told the research assistant which selection they made and were given the type of candy (i.e., bundled or separate) they selected.

Results and Discussion

A total of 156 participants (45% of the 343 we recruited) indicated that they were in a relationship and made a candy selection (this relationship rate did not differ by condition; $\chi^2(1) = 2.79$, $p = .095$). In order to test our main prediction (H3), we estimated a logistic regression with candy choice as the dependent variable (*bundle* = 0 and *separate* = 1) and week condition (*control* = 0 and *Valentine's Day* = 1) as the independent variable. We also controlled for whether participants admitted that they planned to eat both candies themselves (our instructions explicitly told participants to choose candies for "you and another person of your choosing"). As predicted, participants were more likely to choose the bundle in the *Valentine's Day* week condition (49%), compared to the *control* week condition (39%; $B = –.56$, $SE = .35$, $z = –1.59$, $p = .111$). As noted above, we also asked participants to identify the person whom they would give their second Reese's peanut butter cup to and indicate whether they would see their relationship partner sometime in the next two weeks. As an additional check for robustness, we find that controlling for these factors strengthens the effect ($B = –.77$, $SE = .38$, $z = –2.02$, $p = .043$).

These results suggests that a natural occurring manipulation of desire to connect with others—the salience of the Valentine's Day holiday—can potentially increase demand for bundles, which we argue facilitates social connection.

General Discussion

Consumers can already purchase and consume bundles together in many social consumption settings. For example, some movie theaters offer "couples tickets" that grant admission to two people for a single price. Wedding rings typically come delivered in the same jewelry box. Many bars and restaurants sell group passes for special events (e.g., New Year's Eve parties, sporting events) for a single price. Our research highlights one reason why consumers exhibit demand for these products: Consuming and purchasing bundles with others increases interpersonal connection, which people desire.

We tested this account across four studies. In Study 1, we documented a preference for bundles in a consequential choice paradigm. In Studies 2–3, we found that purchasing and consuming bundles with others increased anticipated interpersonal connection. And finally, in Study 4, we observed that the desire to connect moderated the preference for bundles, as suggested by our theoretical account.

Implications

This research adds to the growing body of work examining the psychology of bundling. Much of this research has explored how consumers value bundles (Brough & Chernev, 2011; Chernev & Gal, 2010; Gaeth et al., 1991; Yadav, 1994) and their components (Guiltinan, 1987; Hamilton & Srivastava, 2008; Janiszewski & Cunha, 2004; Popkowski, Leszczyc, & Haubl, 2010). In this work, however, we move beyond valuation of the bundle itself and explore downstream social consequences. Specifically, consumers see multiple items as a single,

inseparable gestalt unit (Shaddy & Fishbach, 2017). Therefore, when they purchase and consume bundles with each other—when they share parts of the same "whole"— they themselves also feel more connected to each other. Here, bundling creates additional value for consumers because the connection among the components of bundles serves to symbolically connect consumers, as well.

To that end, future work could continue to explore the extent to which consumer might actually be wiling to pay more for bundles than similar items offered separately. In Study 1 we observed that pairs of participants actually preferred bundles that individuals rated as inferior to similar items offered separately. This additional social value would likely be of significant interest to firms, given that discounts typically accompany bundles and suppress WTP to pay for them (Estelami, 1999; Heeler, Nguyen, & Buff, 2007). Our work suggests that in certain social consumption settings in might actually be possible for marketers to charge a premium for bundles.

It is also the case that advances in mobile payment technologies (e.g., Venmo, Square Cash, PayPal) are making it increasingly easier for consumers to purchase bundles with each other. These apps facilitate immediate person-to-person cash transfers, which allow people to split costs more easily (as in the Study 2 scenarios). So, for example, friends at dinner might prefer to ask one person to volunteer to pay for the meal and then divvy up the costs via an app at a later time. This makes it easier to pay a single price for multiple people—that is, this makes it easier to purchase a bundle with others. Thus, our work suggests that one potentially underappreciated consequence of these mobile payment technologies is that they will also increase social connection.

In this research, we offer initial evidence suggesting that when consumers purchase and consume bundles together, they feel more connected to each other. In short, bundles may actually serve to "bundle" people.

Appendix 1: Tables

Table 1.1

Mean (SD) and paired t-test results for manipulation checks (items "form a bundle") and "gestalt" impression (items "belong together" and "go well together"): Studies 1–3, and 5.

		Manipulation Checks					
Study	Stimuli	Bundled	Separate	Difference	N	Paired t-test	Sig.
Study 1	Clif Bars	6.13 (1.63)	2.20 (1.56)	3.94 (2.25)	31	t(30) = 9.74	***
Study 2	Chocolate truffles	6.57 (1.33)	2.13 (1.91)	4.43 (2.49)	30	t(29) = 9.76	***
Study 3	Christmas cards	6.37 (1.19)	2.33 (1.86)	4.03 (2.57)	30	t(29) = 8.61	***
Study 5	Suitcases	6.48 (1.12)	2.10 (1.85)	4.39 (2.50)	31	t(30) = 9.77	***
		"Gestalt" Impressions					
Study	Stimuli	Bundled	Separate	Difference	N	Paired t-test	Sig.
Study 1	Clif Bars	6.34 (1.17)	5.84 (1.25)	.50 (.70)	31	t(30) = 4.00	***
Study 2	Chocolate truffles	6.83 (.44)	6.17 (1.19)	.67 (1.11)	30	t(29) = 3.29	**
Study 3	Christmas cards	6.53 (1.16)	6.25 (1.34)	.28 (.89)	30	t(29) = 1.75	†
Study 5	Suitcases	6.56 (.91)	6.08 (1.19)	.48 (.94)	31	t(30) = 2.85	**

†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 2.1

Study 1: Participants preferred simultaneity (i.e., selecting the "same week" delivery option), even though it required waiting longer overall.

Prize	Delivery in the same week (single option)	Delivery in different weeks (both options combined)	Chi-square	Sig.
Gift cards	64%	36%	3.92	$p = .048$
Flash drives	68%	32%	6.48	$p = .011$
Notebooks	66%	34%	5.12	$p = .024$
Water bottles	68%	32%	6.48	$p = .011$
Overall	**67%**	**34%**	**21.78**	**$p < .001$**

Table 2.2

Events used in Study 2 (adapted from Linville & Fischer, 1991).

Category	Domain	Event A	Event B
Small positive	Financial	Found $5	Received $5 refund
	Academic	Received good grade on homework (2% of course grade)	Received good grade on quiz (2% of course grade)
	Social	Shared pizza with friends	Received a nice letter from a friend
Large positive	Financial	Won a $250 prize from a store	Won $200 in a lottery
	Academic	Received excellent grade on exam (40% of course grade)	Received excellent grade on paper (40% of course grade)
	Social	Invited to live with good friends	Invited to an exciting weekend trip
Small negative	Financial	Lost a book you bought for $5	Lost a $5 bill
	Academic	Received disappointing grade on homework (2% of course grade)	Received disappointing grade on quiz (2% of course grade)
	Social	Had a minor misunderstanding with a friend	Had a boring lunchtime conversation with another friend
Large negative	Financial	Lost an airline ticket worth $250	Damaged laptop requiring $200 repairs
	Academic	Received poor grade on exam (40% of course grade)	Received poor grade on paper (40% of course grade)
	Social	Found out you cannot live with a close friend	Had a serious argument with close friend

Table 2.3

Study 4: The desire to connect moderates the preference for simultaneity.

	Choice of "same day" option			
Event	Like condition	Dislike condition	Chi-square	Sig.
Received promotions at work	68%	25%	38.52	$p < .001$
Received tax refunds	60%	28%	21.87	$p < .001$
Upgraded to first class on flights	81%	24%	66.78	$p < .001$
Were sick and missed work	63%	21%	37.56	$p < .001$
Ended up in bad seats at a movie	63%	25%	30.55	$p < .001$
Missed flights	73%	34%	31.84	$p < .001$
Overall	**68%**	**26%**	**218.71**	***p* < .001**

Appendix 2: Figures

Figure 1.1

Study 1: Offering energy bars as a bundle (vs. separately) increases compensation demanded for losses (WTP), yet decreases purchase prices (WTP).

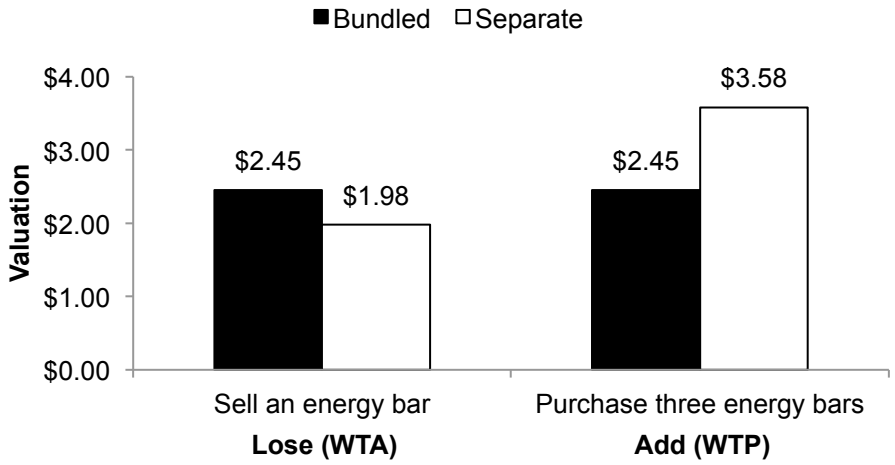

Figure 1.2

Study 2: WTA is higher when selling a truffle from a bundle (vs. separately), yet WTP is lower when adding a truffle to a bundle (vs. separately).

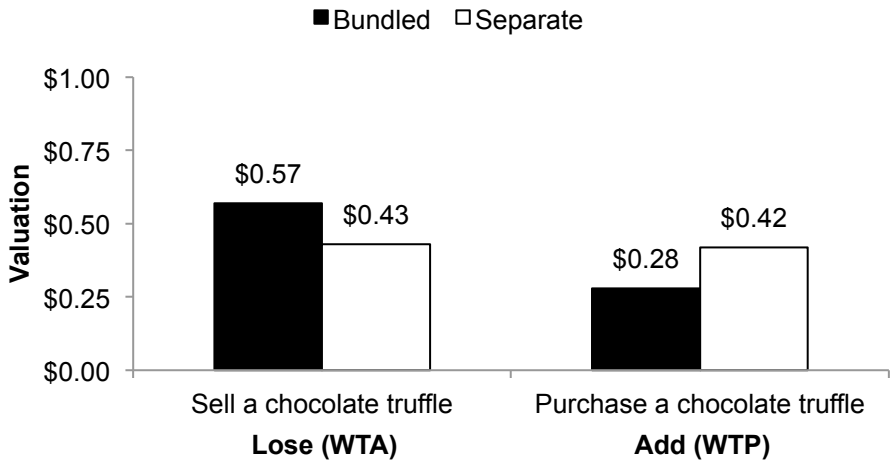

Figure 1.3

Study 3: Dissatisfaction is higher when losing a Christmas card from a bundle (vs. separately), yet satisfaction is lower when adding the same Christmas card to a bundle (vs. separately).

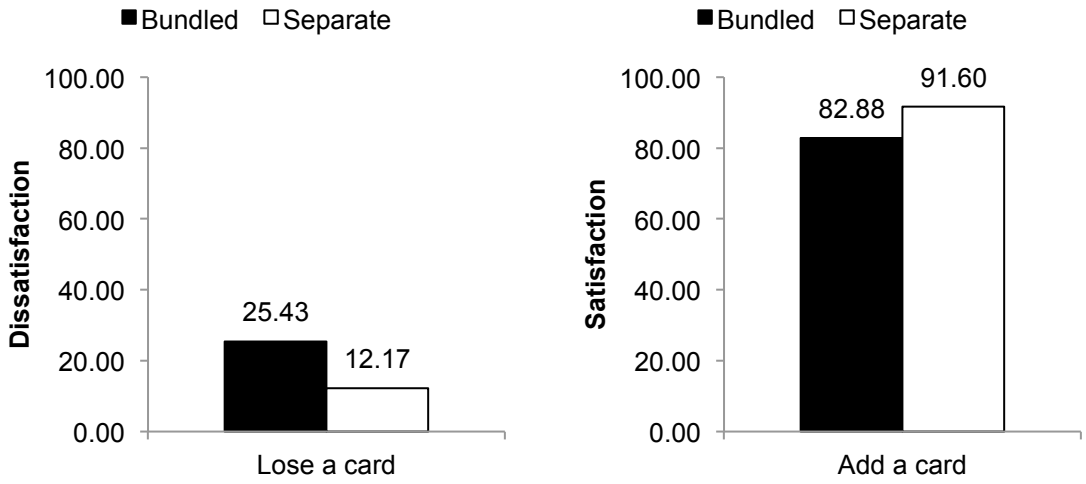

Figure 1.4

Study 4: Offering vehicle services as a bundle (vs. separately) increases compensation demanded for losses (WTA), yet decreases purchase prices (WTP), but this pattern is attenuated for undifferentiated products, which do not create a "gestalt" impression.

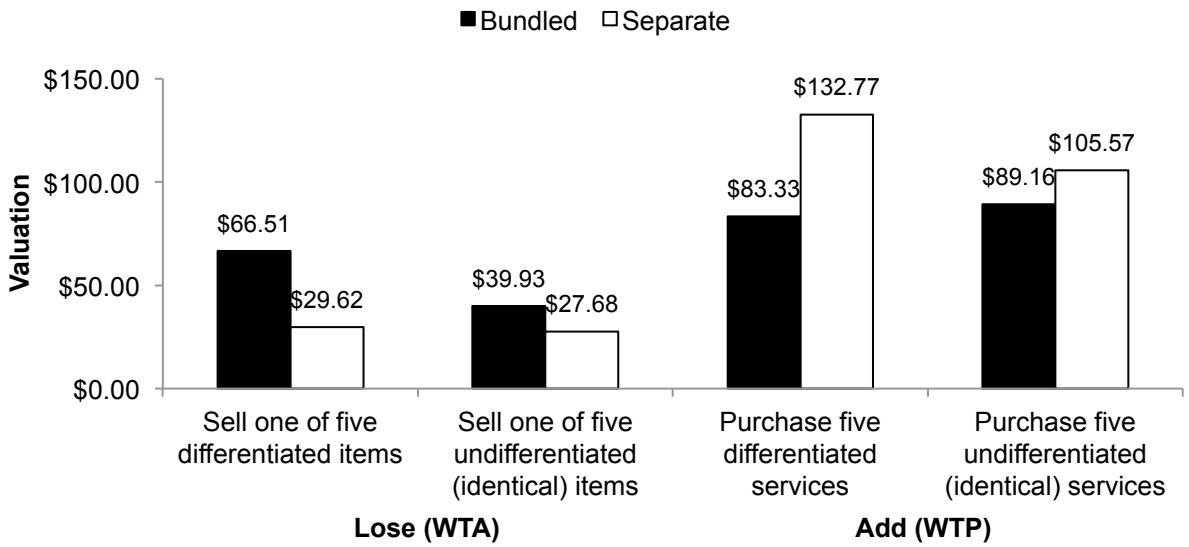

Figure 1.5

Study 5: Compensation demanded is higher when losing a suitcase from a bundle (vs. separately), yet WTP is lower when adding a suitcase to a bundle (vs. separately).

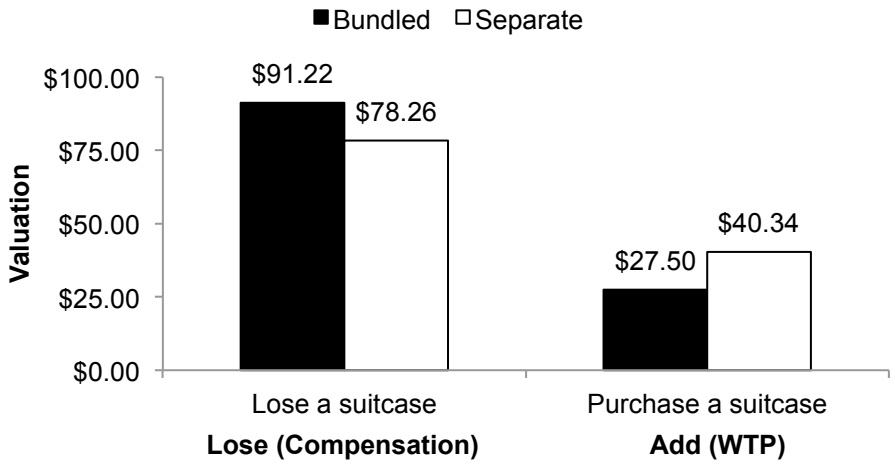

Figure 1.6

Study 6: WTA is higher when selling a baseball card from a bundle (vs. separately), yet WTP is lower when adding a baseball card to a bundle (vs. separately), but this pattern is attenuated when items form a complete set.

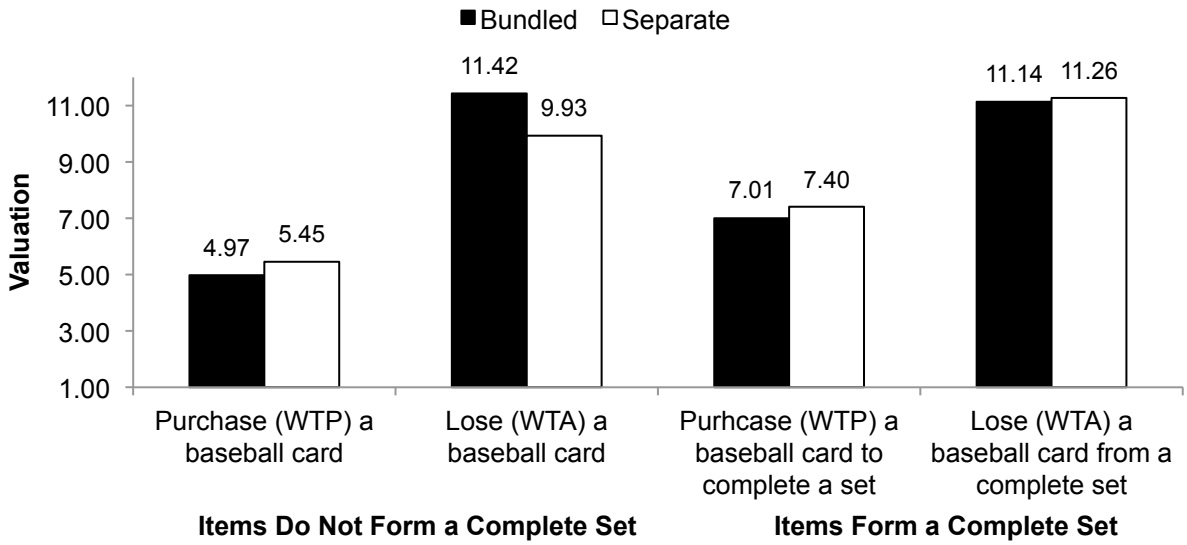

Figure 2.1

Study 2: Participants preferred simultaneity (i.e., preferring events to occur on the same day) more for small events than for large events.

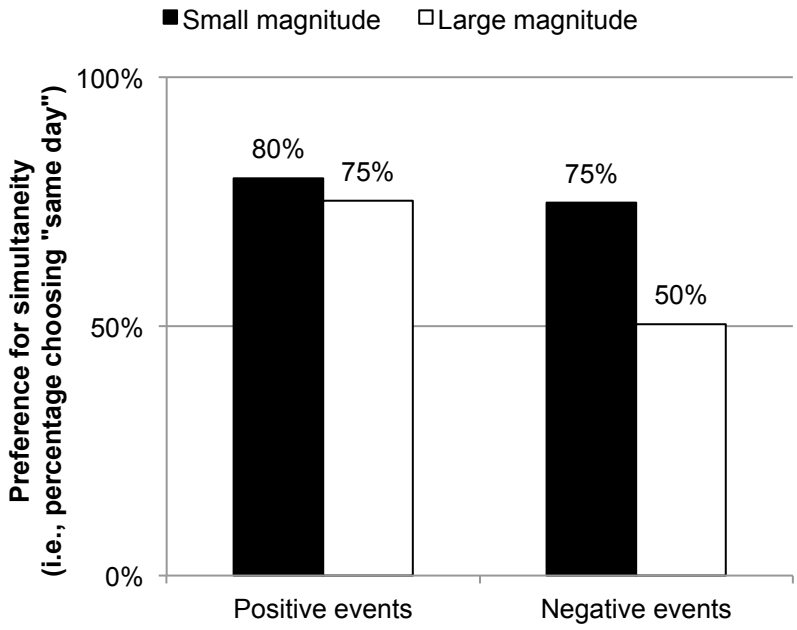

Figure 2.2

Study 3: The preference for simultaneity decreases as magnitude increases. Moreover, as the magnitude of events increases, the preference for simultaneity disappears sooner (i.e., at lower magnitudes) for negative events than for equivalent positive events.

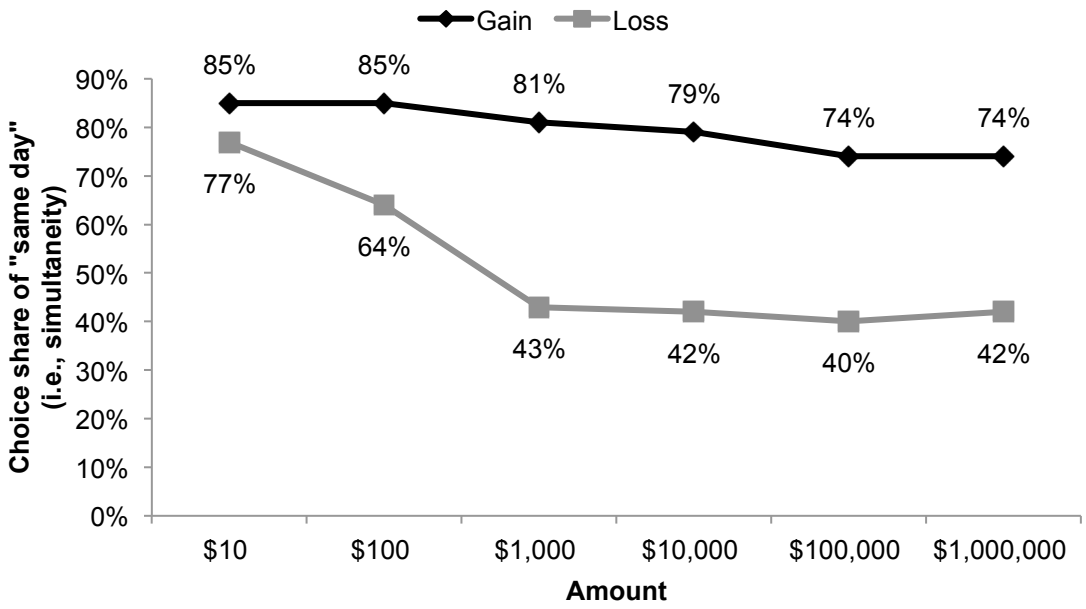

Figure 3.1

Study 1: Pens offered either as a bundle or separately.

Figure 3.2

Study 2: Purchasing bundles together causes consumers to feel more connected, compared to purchasing the same items separately.

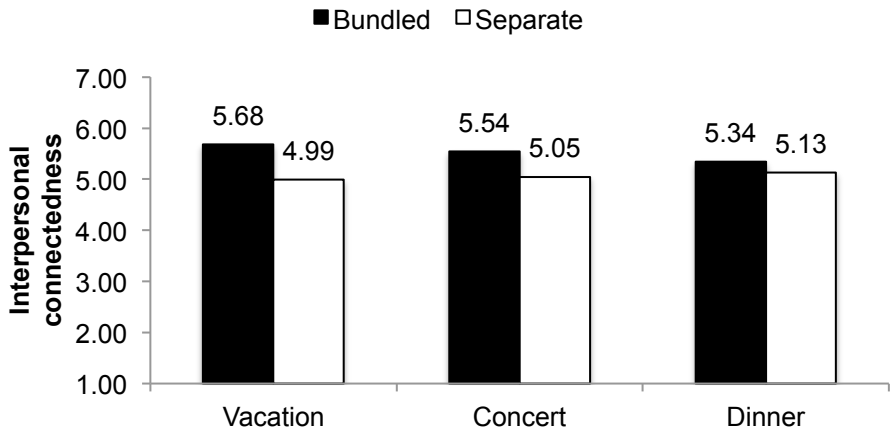

Figure 3.3

Study 3: Bundled (left) vs. separate (right) product pairs.

Figure 3.4

Study 3: Consuming bundles together causes consumers to feel closer, compared to consuming the same items separately.

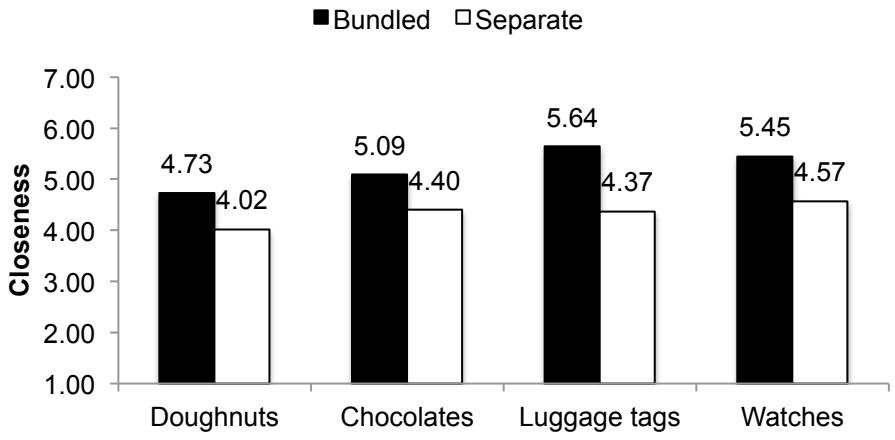

Figure 3.5

Study 4: Valentine's Day imagery.

Figure 3.6

Study 4: Candy offered either as a bundle or separately.

References

Abrams, D. E., & Hogg, M. A. (1990). *Social Identity Theory: Constructive and Critical Advances*. London, England: Harvester Wheatsheaf.

Adams, W. J., & Yellen, J. L. (1976). Commodity bundling and the burden of monopoly. *The Quarterly Journal of Economics*, *90* (3), 475–498.

Aron, A., Aron, E. N., Tudor, M., & Nelson, G. (1991). Close relationships as including other in the self. *Journal of Personality and Social Psychology*, *60* (2), 241–253.

Batson, C. D., Sager, K., Garst, E., Kang, M., Rubchinsky, K., & Dawson, K. (1997). Is empathy-induced helping due to self–other merging? *Journal of Personality and Social Psychology*, *73* (3), 495–509.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117* (3), 497–529.

Becker, G. M., DeGroot, M. H., & Marschak, J. (1964). Measuring utility by a single-response sequential method. *Behavioral Science*, *9* (3), 226–232.

Belk, R. W. (1995). Collecting as luxury consumption: Effects on individuals and households. *Journal of Economic Psychology*, *16* (3), 477–490.

Bhargave, R. P., & Montgomery, N. V. (2015). My recency, our primacy: How social connection influences evaluations of sequences, *Journal of Behavioral Decision Making*, *28* (4), 382–394.

Bhargave, R., & Montgomery, N. V. (2013). The social context of temporal sequences: Why first impressions shape shared experiences. *Journal of Consumer Research*, *40* (3), 501–517.

Boothby, E. J., Clark, M. S., & Bargh, J. A. (2014). Shared experiences are amplified. *Psychological Science*, *25* (12), 2209–2216.

Brough, A. R., & Chernev, A. (2011). When opposites detract: Categorical reasoning and subtractive valuations of product combinations. *Journal of Consumer Research*, *39* (2), 399–414.

Burson, K., Faro, D., & Rottenstreich, Y. (2013). Multiple-unit holdings yield attenuated endowment effects. *Management Science*, *59* (3), 545–555.

Burstein, M. L. (1960). The economics of tie-in sales. *The Review of Economics and Statistics*, *42* (1), 68–73.

Cacioppo, J. T., & Patrick, W. (2008). *Loneliness: Human Nature and the Need for Social Connection*, New York, NY: WW Norton & Company.

Chakravarti, D., Krish, R., Paul, P., & Srivastava, J. (2002). Partitioned presentation of multicomponent bundle prices: Evaluation, choice and underlying processing effects. *Journal of Consumer Psychology*, *12* (3), 215–229.

Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception–behavior link and social interaction. *Journal of Personality and Social Psychology*, *76* (6), 893–910.

Chernev, A., & Gal, D. (2010). Categorization effects in value judgments: Averaging bias in evaluating combinations of vices and virtues. *Journal of Marketing Research*, *47* (4), 738–747.

Choshen-Hillel, S., Shaw, A., & Caruso, E. M. (2015). Waste management: How reducing partiality can promote efficient resource allocation. *Journal of Personality and Social Psychology*, *109* (2), 210–231.

Cialdini, R. B., Brown, S. L., Lewis, B. P., Luce, C., & Neuberg, S. L. (1997). Reinterpreting the empathy–altruism relationship: When one into one equals oneness. *Journal of Personality and Social Psychology*, *73* (3), 481–494.

Clark, A. E., & Kashima, Y. (2007). Stereotypes help people connect with others in the community: A situated functional analysis of the stereotype consistency bias in communication. *Journal of Personality and Social Psychology*, *93* (6), 1028–1039.

Clark, M. S., & Reis, H. T. (1988). Interpersonal processes in close relationships. *Annual Review of Psychology*, *39* (1), 609–672.

Cunha, M., Forehand, M. R., & Angle, J. W. (2015). Riding coattails: When co-branding helps versus hurts less-known brands. *Journal of Consumer Research*, *41* (5), 1284–1300.

Dansby, R. E., & Conrad, C. (1984). Commodity bundling. *The American Economic Review*, *74* (2), 377–381.

Diener, E., & Seligman, M. E. (2002). Very happy people. *Psychological Science*, *13* (1), 81–84.

Estelami, H. (1999). Consumer savings in complementary product bundles. *Journal of Marketing Theory and Practice*, *7* (3), 107–114.

Evers, E. R., Inbar, Y., & Zeelenberg, M. (2014). Set-fit effects in choice. *Journal of Experimental Psychology: General*, *143* (2), 504–509.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39* (2), 175–191.

Fischler, C. (2001). Commensality, society, and culture. *Social Science Information*, *50* (3–4), 528–548.

Fredrickson, B. L., & Kahneman, D. (1993). Duration neglect in retrospective evaluations of affective episodes. *Journal of Personality and Social Psychology*, *65* (1), 45–55.

Gaeth, G. J., Levin, I. P., Chakraborty, G., & Levin, A. M. (1991). Consumer evaluation of multi-product bundles: An information integration analysis. *Marketing Letters*, *2* (1), 47–57.

Gao, L., Huang, Y., & Simonson, I. (2014). The influence of initial possession level on consumers' adoption of a collection goal: A tipping point effect. *Journal of Marketing*, *78* (6), 143–156.

Gardner, W. L., Pickett, C. L., & Brewer, M. B. (2000). Social exclusion and selective memory: How the need to belong influences memory for social events. *Personality and Social Psychology Bulletin*, *26* (4), 486–496.

Goldstein, N. J., & Cialdini, R. B. (2007). The spyglass self: A model of vicarious self-perception. *Journal of Personality and Social Psychology*, *92* (3), 402–417.

Gonzaga, G. C., Campos, B., & Bradbury, T. (2007). Similarity, convergence, and relationship satisfaction in dating and married couples. *Journal of Personality and Social Psychology*, *93* (1), 34–48.

Guiltinan, J. P. (1987). The price bundling of services: A normative framework. *Journal of Marketing*, *51* (2), 74–85.

Hamilton, R. W., & Srivastava, J. (2008). When 2+ 2 is not the same as 1+ 3: Variations in price sensitivity across components of partitioned prices. *Journal of Marketing Research*, *45* (4), 450–461.

Heeler, R. M., Nguyen, A., & Buff, C. (2007). Bundles = discount? Revisiting complex theories of bundle effects. *Journal of Product & Brand Management*, *16* (7), 492–500.

Heine, S. J., Proulx, T., & Vohs, K. D. (2006). The meaning maintenance model: On the coherence of social motivations. *Personality and Social Psychology Review*, *10* (2), 88–110.

Janiszewski, C., & Cunha, M. (2004). The influence of price discount framing on the evaluation of a product bundle. *Journal of Consumer Research*, *30* (4), 534–546.

Kahn, B., Ratner, R., & Kahneman, D. (1997). Patterns of hedonic consumption over time. *Marketing Letters*, *8* (1), 85–96.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47* (2), 263–292.

Kahneman, D., Fredrickson, B. L., Schreiber, C. A., & Redelmeier, D. A. (1993). When more pain is preferred to less: Adding a better end. *Psychological Science*, *4* (6), 401–405.

Kahneman, D., Knetsch, J. L., & Thaler, R. H. (1990). Experimental tests of the endowment effect and the Coase Theorem. *Journal of Political Economy*, *98* (6), 1325–1348.

Kanizsa, G. (1979). *Organization in Vision: Essays on Gestalt Perception*. Connecticut: Praeger Publishers.

Kelley, H. H., & Thibaut, J.W. (1978). *Interpersonal Relations: A Theory of Interdependence*. New York, NY: John Wiley & Sons Inc.

Khan, U. & Dhar, R. (2010). Price-framing effects on the purchase of hedonic and utilitarian bundles. *Journal of Marketing Research*, *47* (6), 1090–1099.

Koffka, K. (1935). *Principles of Gestalt Psychology*. United Kingdom: Routledge.

Köhler, W. (1970). *Gestalt Psychology: An Introduction to New Concepts in Modern Psychology*. New York, NY: Liveright Publishing Corporation.

Lakin, J. L., & Chartrand, T. L. (2003). Using nonconscious behavioral mimicry to create affiliation and rapport. *Psychological Science*, *14* (4), 334–339.

Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. *Advances in Experimental Social Psychology*, *32*, 1– 62.

Levine, J. M., & Higgins, E. T. (2001), Shared reality and social influence in groups and organizations. In F. Butera & G. Mugny (Eds.), *Social Influence in Social Reality: Promoting Individual and Social Change* (pp. 33–52). Ashland, OH: Hogrefe & Huber Publishers.

Linville, P. W., & Fischer, G. W. (1991). Preferences for separating or combining events. *Journal of Personality and Social Psychology*, *60* (1), 5–23.

Loewenstein, G. F., & Prelec, D. (1993). Preferences for sequences of outcomes. *Psychological Review*, *100* (1), 91–108.

Maner, J. K., DeWall, C. N., Baumeister, R. F., & Schaller, M. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the "porcupine problem." *Journal of Personality and Social Psychology*, *92* (1), 42–55.

Miles, L. K., Nind, L. K., & Macrae, C. N. (2009). The rhythm of rapport: Interpersonal synchrony and social perception. *Journal of Experimental Social Psychology*, *45* (3), 585–589.

Mishra, H., Mishra, A., & Nayakankuppam, D. (2006). Money: A bias for the whole. *Journal of Consumer Research*, *32* (4), 541–549.

Morwitz, V. G., Greenleaf, E. A., & Johnson, E. J. (1998). Divide and prosper: Consumers' reactions to partitioned prices. *Journal of Marketing Research*, *35* (4), 453–463.

Murray, S. L., Holmes, J. G., Bellavia, G., Griffin, D. W., & Dolderman, D. (2002). Kindred spirits? The benefits of egocentrism in close relationships. *Journal of Personality and Social Psychology*, *82* (4), 563–581.

Nayakankuppam, D., & Mishra, H. (2005). The endowment effect: Rose-tinted and dark-tinted glasses. *Journal of Consumer Research*, *32* (3), 390–395.

Novemsky, N., & Ratner, R. K. (2003). The time course and impact of consumers' erroneous beliefs about hedonic contrast effects. *Journal of Consumer Research*, *29* (4), 507–516.

Palmer, S. E. (2002). Visual perception of objects. In I. B. Weiner (Ed.), *Handbook of Psychology*, New York, NY: Wiley.

Park, C. W., Jaworski, B. J., & Maclnnis, D. J. (1986). Strategic brand concept-image management. *Journal of Marketing*, *50* (4), 135–145.

Park, C. W., Jun, S. Y., & MacInnis, D. J. (2000). Choosing what I want versus rejecting what I do not want: An application of decision framing to product option choice decisions. *Journal of Marketing Research*, *37* (2), 187–202.

Popkowski L., Peter, T. L., & Häubl, G. (2010). To bundle or not to bundle: Determinants of the profitability of multi-item auctions. *Journal of Marketing*, *74* (4), 110–124.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, *42* (1), 185–227.

Raghubir, P., & Srivastava, J. (2009). The denomination effect. *Journal of Consumer Research*, *36* (4), 701–713.

Ramanathan, S., & McGill, A. L. (2007). Consuming with others: Social influences on moment-to-moment and retrospective evaluations of an experience. *Journal of Consumer Research*, *34* (4), 506–524.

Ratner, R. K., Kahn, B. E., & Kahneman, D. (1999). Choosing less-preferred experiences for the sake of variety. *Journal of Consumer Research*, *26* (1), 1–15.

Redelmeier, D. A., & Kahneman, D. (1996). Patients' memories of painful medical treatments: Real-time and retrospective evaluations of two minimally invasive procedures. *Pain*, *66* (1), 3–8.

Ross, W. T., & Simonson, I. (1991). Evaluations of pairs of experiences: A preference for happy endings. *Journal of Behavioral Decision Making*, *4* (4), 273–282.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25* (1), 54–67.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55* (1), 68–78.

Schachter, S. (1959). *The Psychology of Affiliation: Experimental Studies of the Sources of Gregariousness*. Stanford, CA: Stanford University Press.

Schmalensee, R. (1982). Commodity bundling by single-product monopolies. *The Journal of Law and Economics*, *25* (1), 67–71.

Shaddy, F. P., & Fishbach, A. (2017). Seller beware: How bundling affects valuation. *Journal of Marketing Research*, *54* (5), 737–751.

Shteynberg, G., Hirsh, J. B., Apfelbaum, E. P., Larsen, J. T., Galinsky, A. D., & Roese, N. J. (2014). Feeling more together: Group attention intensifies emotion. *Emotion*, *14* (6), 1102–1114.

Soman, D. & Gourville, J. T. (2001). Transaction decoupling: How price bundling affects the decision to consume. *Journal of Marketing Research*, *38* (1), 30–44.

Stremersch, S., & Tellis, G. J. (2002). Strategic bundling of products and prices: A new synthesis for marketing. *Journal of Marketing*, *66* (1), 55–72.

Telser, L. G. (1979). A theory of monopoly of complementary goods. *Journal of Business*, *52* (2), 211–230.

Thaler, R. (1985). Mental accounting and consumer choice. *Marketing Science*, *4* (3), 199–214.

Thaler, R. H. (1999). Mental accounting matters. *Journal of Behavioral Decision Making*, *12* (3), 183–206.

Thaler, R. H., & Johnson, E. J. (1990). Gambling with the house money and trying to break even: The effects of prior outcomes on risky choice. *Management Science*, *36* (6), 643–660.

Tu, Y., Shaw, A., & Fishbach, A. (2015). The friendly taking effect: How interpersonal closeness leads to seemingly selfish yet jointly maximizing choice. *Journal of Consumer Research*, *42* (5), 669–687.

Tversky, A., & Kahneman, D. (1986). Rational choice and the framing of decisions. *Journal of Business*, *59* (4), S251-S278.

Tversky, A. & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty*, *5* (4), 297–323.

Weaver, K., Garcia, S.M., & Schwarz, N. (2012). The presenter's paradox. *Journal of Consumer Research*, *39* (3), 445–460.

Wegner, D. M., Erber, R., & Raymond, P. (1991). Transactive memory in close relationships. *Journal of Personality and Social Psychology*, *61* (6), 923–929.

Wertenbroch, K. (1998). Consumption self-control by rationing purchase quantities of virtue and vice. *Marketing Science*, *17* (4), 317–337.

Wilson, T. D., Meyers, J., & Gilbert, D. T. (2003). "How happy was I, anyway?" A retrospective impact bias. *Social Cognition*, *21* (6), 421–446.

Woolley, K. R., & Fishbach, A. (2016). For the fun of it: Harnessing immediate rewards to increase persistence in long-term goals. *Journal of Consumer Research*, *42* (6), 952–966.

Yadav, M. S. (1994). How buyers evaluate product bundles: A model of anchoring and adjustment. *Journal of Consumer Research*, *21* (2), 342–353.

Yadav, M. S., & Monroe, K. B. (1993). How buyers perceive savings in a bundle price: An examination of bundle's transaction value. *Journal of Marketing Research*, *30* (3), 350–358.