ANCHORS, NORMS AND DUAL PROCESSES: EXPLORING DECISION MAKING IN PAY-WHAT-YOU-WANT PRICING CONTEXTS

by

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DISSERTATION ABSTRACT

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The dissertation explores factors influencing consumers' payments in anonymous Pay-What-You-Want (PWYW) pricing contexts. Consumers often pay more than zero when given the opportunity to self-determine payments. However, most PWYW research has focused on contexts where the possibility of social influence from a salesperson or clerk is present. I suggest that in anonymous exchange contexts where social pressure does not exist, consumers will nevertheless make voluntary payments greater than zero.

The present research explores PWYW in anonymous purchase contexts. Results from eight studies indicate that PWYW payment amounts are affected by heuristics and biases. In Essay 1, the influence of reference price on PWYW payments is explored. Firm-provided external reference prices (ERPs) framed as injunctive norms (e.g., suggested price) and descriptive norms (e.g., average payment) caused anchoring effects on voluntary payments such that those with higher ERPs reported higher payments. Further, ERPs framed as descriptive (vs. injunctive) norms were more predictive of payment amounts, but only when the ERP is high.

Recalling internal reference price information is more effortful than simply reacting to a firm-provided price. The possibility that decreased cognitive processing results in higher payments, violating the concept of self-interest primacy, is explored in Essay 2. Four studies manipulate processing styles and demonstrate that when consumers use more effortful cognitive processing, they tend to make lower PWYW payments. These results suggest that consumers are likely to rely on a normal price heuristic when using more superficial processing.

The dissertation demonstrates the importance of reference price information and cognitive processing styles when voluntary anonymous payments are made anonymously. PWYW decisions are influenced by the exchange context and how the information is cognitively processed. At a theoretical level, the findings demonstrate that consumers make voluntary payments in the absence of social pressure and that those payments can be predictably influenced by features in the exchange setting. Finally, the research suggests that consumers who exert less cognitive effort in PWYW situations make higher payments. It therefore appears that the first instinct is not to act self-interestedly by making little or no payments, but rather payments seem to be guided by heuristic-based decision making.

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CHAPTER I

INTRODUCTION

It's up to you. In 2007, four unexpected words posed by the alternative rock band Radiohead sparked a flurry of excitement in the music world. Those in the marketing field also took note. When fans went to buy an mp3 download of the new album *In Rainbows*, rather than a price they were confronted with this statement: *It's up to you.* Consumers were able to report and pay any price they desired, including zero, and immediately download the songs. This now well-known case was a highly publicized example of a strategy known as Pay-What-You-Want (PWYW) pricing that allows consumers to select their own individual price and all buyers receive the same product, regardless of price paid. Though official word from the band will only say the experiment was "profitable," sources report approximately 62% of buyers downloaded the album for free, the remaining buyers paid on average around $6.00 (average price with all buyers considered closer to $2.00), making *In Rainbows* Radiohead's most profitable release ever (Pareles 2007).

Although PWYW is not entirely new in practice, it has recently been the focus of an increasing amount of academic research. The defining aspects of PWYW are present in many real world examples, although we may not recognize them as such. Public good dilemmas, such as in the case of Public Broadcasting System (PBS) where all consumers can receive the same product regardless of payment/nonpayment and magnitude of payment, is similar to PWYW pricing. The strategy can be risky because it is possible that many or all consumers will choose to pay a price below cost or even nothing.

Rational choice theory, endorsed by classical economists, predicts that every consumer who is allowed to set a price will select zero. Even bounded rationality models that allow for some deviation from strict rationality would predict low or no payments in a PWYW context (Simon 1956). Despite the assertions of neoclassical economic theory, existing research from the behavioral decision making field (e.g., Camerer 1997), as well as dozens of real world examples, suggests that PWYW may nevertheless be a profitable pricing strategy.

Technology in recent years has changed the way products are sold and consumed. Many products that used to be sold in tangible form are now distributed as intangible products – often in digital formats (e.g., music, software, applications, streaming online news and entertainment content, etc.). The very nature of intangible goods makes them particularly well suited for PWYW strategies. The incremental cost for one mp3 album download, for instance, is negligible and this reduces some of the risk involved with PWYW. When one (or many) mp3s are taken for nothing or a very low cost, profit can still be achieved as long as payments are on average greater than the cost of each unit sold. PWYW affords the possibility to collect something from those who would not purchase at the normal price, but still want to obtain the product and would be willing to pay more than zero. These new buyers may pay above the incremental cost incurred by the seller, though below what the normal price would have been under traditional pricing. Firms can realize additional value in a PWYW strategy compared to a fixed price strategy due to three distinct revenue sources: payments from individuals who would not purchase at the fixed price but still perceive value and would pay above zero, surplus payments from individuals paying more than the fixed price and, finally, cross selling where

payments are zero for the current transaction but there is an intent to purchase other products from the firm in the future (for a musical example, see El Harbi, Grolleau, and Bekir 2011). Additionally, intangible goods typically offer a limitless supply of product, so the potential increase in demand created through a PWYW strategy can be met by the firm and help ensure a profit overall.

Often, the purchase situation for intangible products involves anonymous shopping. That is, the purchase is made with no interpersonal buyer-seller interaction. This removes the possibility of social pressure from another to pay a fair price at the time purchase, a feature present in most prior PWYW research. It seems safe to assume that buyers pay more when they are observed or think they are being observed. For example, even a set of photocopied eyes on the wall has been shown to significantly increase payments into an "honesty box" (Bateson, Nettle and Roberts 2006). Consequently, PWYW has been considered impractical for situations where the buyer does not exchange payment with an actual human seller (e.g. Kim, Natter, and Spann 2009). The assumption that consumers will not act fairly when acting anonymously is somewhat surprising. Many studies have demonstrated people will act fairly in cases of anonymity even when they have little or no rational reason to do so (e.g., Frey and Meier 2004). Public good dilemmas, ultimatum and dictator games clearly suggest that *homo economicus*, the mythical man always seeking to maximize utility, is a product of theory rather than an exemplar of real world behavior (Ariely 2009). Instead of free riding and zero contributions, people do make contributions to shared public goods and anonymous partners. Without social pressure, the buyer may face self-inflicted pressure related to impression management. The buyer is still sending a signal to the self whether or not

there is a seller physically taking the payment. The desire to appear to the self as a good and fair person can be a strong motivator to act commensurately (Dunning 2007).

The purchase contexts selected for the current dissertation include intangible products paid for anonymously. Not only are these types of products better suited for PWYW from a cost structure perspective (unlimited supply and small incremental cost), they also represent business categories currently adapting to changing consumption patterns (music, journalism). Because adopting a PWYW strategy is risky for firms, it is important to explore the factors that influence payment amounts, particularly those under the control of the firm. In addition to practical applications, this research will extend knowledge in consumer decision making. The dissertation explores heuristics and biases in PWYW decision making. Specifically, essay 1 explores the anchoring heuristic and essay 2 tests for dual processing effects on PWYW payments. That is, essay 2 investigates dual processing and its connection to self-interest and justice motivations, as well as heuristic-based decision making in a PWYW context.

RESEARCH OVERVIEW

A total of eight studies comprise the two essays that follow. In all studies, it was expected that consumers would report paying more than zero on average in a PWYW setting. In the first essay, four studies are described exploring how heuristics and biases affect PWYW payment amounts. Because determining a PWYW amount is a decision made under uncertainty, it is likely to be affected by heuristics and biases (Tversky and Kahneman 1974). Specifically, the studies explore anchoring and adjustment effects

based on numeric information presented in a PWYW context. Also tested is the extent to which normative framing (i.e., descriptive vs. injunctive) of numeric anchors affects PWYW payments. The second essay details four studies which explore the relationship between dual processing and justice vs. self-interest motivations in determining PWYW payment amounts.

Essay 1

In studies 1 and 2, it is hypothesized that externally provided numeric information will have an anchoring effect on PWYW payment amounts. Higher (vs. lower) face value numbers provided immediately before or during the purchase are expected to elicit higher PWYW payments. Additionally, study 2 tests for the relative influence of numbers framed as either descriptive or injunctive norms. Descriptive norms are expected to be more predictive of PWYW payments. Study 3 considers the anchoring effects of company-set minimum and maximum constraints on voluntary payments. It is expected that implementing a minimum payment above zero will *decrease* average payments relative to a true PWYW (no constraint) context. Additionally, implementing a maximum constraint, or capping payments, will *increase* average payments, a result which may be counterintuitive from a business perspective. The final study tests for anchoring effects of self-generated price information on PWYW payments. Internal reference prices (vs. externally provided numbers) are hypothesized to influence PWYW payments through dual processing effects rather than anchoring. Table 1 provides an overview of these studies.

TABLE 1

OVERVIEW OF STUDIES 1-4: ESSAY 1

Essay 1	Description	Context	Manipulations
Study 1	Normal Price	CLOUDX	ERP* (not present, low ($9.99), high ($24.99)
Study 2	Suggested Price vs. Average Price	Concert Tickets	Norm Frame (injunctive, descriptive) x ERP (not present, low ($9.99), high ($24.99))
Study 3	Constraining PWYW	Mp3	Constraint (none, minimum ($2), maximum ($25))
Study 4	Internal Reference Price	CLOUDX	IRP† (Charge and Worth) x ERP (Low ($2-$4), High $8-$16))

*External Reference Price
†Internal Reference Price

Studies 1-3 considered PWYW effects elicited by external reference prices (ERPs) provided by the firm, which can take several forms. Participants in study 1 were given a high (vs. low) price that the company would charge under a traditional pricing strategy (referred to as a "normal" price). A normal price suggests an injunctive norm because it indicates what the company believes the consumer ought to pay. Study 2 tested the effects of framing numbers as descriptive and injunctive norms. Descriptive norms provide the consumer with information about what others are doing. Specifically, study 2 explored how ERPs presented as the "average" price paid by others affect PWYW payments.

Study 3 provided a test of a third form of numeric information. Numbers provided in this study did not represent normative framing information per se. Rather, low anchor conditions were expressed as a minimum payment allowed and high anchors were set as a maximum payment allowed, in contrast to a true PWYW condition with no minimum or maximum restrictions. It was expected that setting maximums will increase payment amounts via a subtle anchoring effect that is independent of injunctive norm framing. Low minimums were expected to result in lower payments due to anchoring on a low value and the use of a default setting. Although these restraints on payment amounts

technically violate true PWYW, it is a technique often used in business practice. Firms implement PWYW minimums to protect themselves from the risk of very low or zero payments, but minimums are herein demonstrated to have a *negative* effect on payments overall.

The fourth and final study in essay 1 was developed to test whether self-generated internal reference prices (IRPs) may also have an anchoring effect on PWYW payments. IRPs are separate from any external information given by the seller and refer to price information an individual has prior to the actual purchase based both on expectations and prior purchases (Mayhew and Winer 1992). It is possible that IRPs, once called to mind and reported, act as anchors in a manner similar to that of ERPs. Another possibility is that the process of calling to mind an IRP engages a different processing system that supersedes anchoring effects. When consumers engage in more rational and calculated processing, they may be more likely to act out of self-interest by paying less. Such a finding would suggest that cognitive processing style influences payment amounts in PWYW settings.

Essay 2

Essay 2 was developed to further explore the role of cognitive effort in PWYW contexts suggested by findings from study 4. It has been suggested that people use a dual processing system when making decisions (Kahneman 2011). System 1 is an automatic and intuitive process that is in control of judgments, decisions and behaviors most of the time. However, when a decision is important or complex, the more rational and effortful

System 2 processing style is engaged. Individuals making quick decisions using System 1 processing are thought to act more selfishly due to the primacy of the self-interest motivate (Moore and Loewenstein 2004). This suggests that justice and fairness concerns become salient only when self-interest is actively suppressed, such as when System 2 processing is engaged. However, although counterintuitive, it is also possible that the opposite is true. Recent work by Rand, Greene and Nowak (2012) indicates that quick decisions tend to be more generous in economic games. Further, Zaki and Mitchell (2013) describe new evidence that prosocial behavior may be intuitive. It may be that reliance on System 1 processing will elicit higher PWYW payments. The reason for this is that given an unusual decision, such as deciding how much to pay in a PWYW context, the consumer may experience uncertainty. Uncertainty may lead the consumer to rely on heuristic-based decision making. In a PWYW context, the most accessible information to use in determining payment is likely to be the expected normal price. This would suggest that less cognitive effort could yield higher PWYW payments. Essay 2 tests for this counterintuitive idea.

In essay 2, the somewhat surprising possibility that those relying on System 1 processing when determining payment amounts tend to pay more than those using System 2 processing is explored. The possibility that the first instinct in PWYW is to pay more is very curious because people are thought to be fundamentally self-interested. Additionally, studies herein explore whether increasing the salience of fairness may have a positive effect on voluntary payments. Essay 2 is comprised of four studies that test the role of dual processing and its effects on PWYW payments. Please see table 2 for an overview of essay 2 studies.

TABLE 2

OVERVIEW OF STUDIES 1-4: ESSAY 2

Essay 1	Dual Processing Manipulation Type	Context	Manipulations
Study 1	Recalling IRP	CLOUDX	Fairness (salient, control) x IRP Type (control, low, high)
Study 2	Cognitive Load	CLOUDX	Fairness (altruistic, egotistic, control) x Load (high, low)
Study 3	Elaboration Type	CLOUDX	POV (self, firm) x Elaboration Type (increase, decrease, neutral) + control
Study 4	Time Constraints	CLOUDX	ERP (control, low, high) x Constraint (control, long, short)

In the final study of the first essay which informed study 1 in essay 2, participants were asked to provide two pieces of internal reference price (IRP) information. First, they were asked to provide estimates of what they thought the company would charge for the service. Second, they were asked to indicate how much they personally thought the service was worth. In the first study of essay 2, these two elements are separated on a between-subjects basis. Considered here is that, regardless of recalled IRP amount, the act of reporting a self-generated value will lead to lower PWYW payments. IRPs were not expected to be a particularly effective anchor because of their rather vague nature. Thus, rather than IRPs causing anchoring effects on payments, exerting the effort to report IRP information may cause more engaged consumers to act self-interestedly. If cognitive effort level is increased, it is possible that System 2 processing will lead consumers to make lower PWYW payments.

The nature of cognitive processing in the context of PWYW is further explored in the final three studies of essay 2. In study 2 of this essay, processing style was manipulated using a cognitive load procedure. System 2 processing should lead to lower

PWYW amounts if the availability of greater cognitive resources leads to more deliberate thinking about one's own self interests in selecting an amount to pay. On the other hand, those processing with System 1 (e.g., under high cognitive load) are likely to make less effortful decisions guided by heuristic-based decision making. In a PWYW context, the automatic choice may be to pay the expected normal price.

In study 3 processing style was manipulated by utilizing an elaboration task. Some participants were asked to imagine themselves as the buyer and others acted as employees for the company considering PWYW implementation. Additionally, participants were randomly assigned to either think about and explain why one would pay a fair/high amount or nothing/very low amounts. I suspected that those elaborating will make lower PWYW payments compared to a group that does not elaborate.

The final study in essay 2 used a third dual processing manipulation designed to extend the previous studies. Importantly, the study also explored the reason why System 1 elicits higher PWYW payments. Processing style was manipulated using time constraints that required participants to make either fast or slow decisions. Although System 1 leads to higher payments, this does not necessarily indicate that self-interest has been suppressed in favor of acting fairly. It is hypothesized that higher payments are the result of System 1 heuristic-based decision making, whereas lower payments resulting from System 2 processing will reflect self-interest motives.

CHAPTER II

ESSAY 1: PLEASE PAY WHAT IS SUGGESTED:

ANCHORING AND NORMATIVE FRAMING EFFECTS IN

PAY-WHAT-YOU-WANT CONTEXTS

INTRODUCTION

The first essay explores anchoring and normative framing effects in an anonymous Pay-What-You-Want pricing context. In order to reduce the financial risk of implementing a PWYW strategy, firms must understand the manner and extent to which numeric information and its meaning affect payments. Extending what is known about willing-to-pay prices to a context where consumers have complete control of price setting will advance understanding of heuristics and biases in a unique consumer context. Also, testing for these effects in an anonymous context will provide insights into the feasibility of PWYW pricing in online shopping. Research suggests that the anonymity of payments does not preclude buyers from paying something (León, Noguera, and Tena-Sánchez 2012) and that traditional anchoring effects hold in a participative pricing context (Johnson and Chu 2012). Additionally, numeric information (e.g., suggested prices, normal prices, etc.) in PWYW purchase contexts can represent different types of normative information, providing insight into what one should or is expected to do (injunctive norms) or about what others are doing (descriptive norms). Differences in effect sizes between normative information frames both will guide practitioners in

PWYW implementation and extend our understanding of consumer conformity to norms. The current research explores judgments and decisions in a PWYW context that may provide insight into more widely applicable knowledge about basic human motivations.

Next, an overview of existing research related to the first essay is provided. Participative pricing as well as PWYW studies are reviewed. An introduction to framing and anchoring as it relates to the current context is provided. Because different frames of numeric information are expected to influence judgments and decisions in various ways, several concepts which are expected to influence payments are reviewed. Research on external and internal reference prices is outlined. Also, the theoretical foundation for the influence of different types of normative information, specifically injunctive and descriptive norms, is discussed. Six hypotheses related to the effects of ERPs on PWYW payments are derived. The following section describes four studies that test these hypotheses. Finally, questions stemming from expected results of the final study are posed and possible explanations are suggested. These questions form the basis for future research and are explored in depth in essay 2.

BACKGROUND

Psychological Pricing

Most extant marketing research in the pricing domain focuses on either how firms set prices or how consumers react to prices. Marketing strategy research in pricing focuses on one of the most complex and critically important marketing decisions a firm makes - how much to price its products (Monroe 1990). Traditionally, a firm determines

the price to charge by considering cost structures, competitor prices, and desired profit levels (Tellis 1986). Occasionally, a firm will consider the psychological influences prices can have on consumers as well. Alternatively, consumer behavior research investigates how consumers form judgments about prices (good/bad, fair/unfair, etc.) and the resulting action (buy/not buy; Lui and Soman 2008). Another important measure for pricing researchers is willingness-to-pay (WTP), which is defined as the dollar amount above which the consumer would decide not to buy (Monroe 1973). The same explicit price can be perceived and judged differently because consumers have idiosyncratic reactions to prices based on individual differences, contexts, product types, information availability, experience and a host of other variables (Monroe 1973). The vast majority of pricing research is situated inside a model assuming the firm as price setter and consumer as acceptor/rejecter.

A smaller body of research focuses on consumer behavior related to more creative pricing tactics such as dynamic and participative pricing mechanisms. Research in this domain still mainly centers on economic models, rather than on the psychological reactions and outcomes. Dynamic pricing, also known as individual-level price discrimination, refers to tactics where prices vary over time, across consumers, and/or circumstances (Haws and Bearden 2006). These tactics are becoming more prevalent due to easier online implementation (Kannan and Kopalle 2001) and can be beneficial to both firms and consumers, but can also be viewed quite negatively by consumers because of fairness concerns over charging different prices to different consumers (Haws and Bearden 2006). Pay-What-You-Want (PWYW) is an example of dynamic pricing in that

each consumer pays a different price, although consumers are less likely to be concerned about fairness since buyers are setting their own prices.

Participative pricing strategies are defined as those giving the consumer some measure of control in price determination and include such tactics as auctions, negotiations, reverse pricing and name-your-price (NYOP) models (Chandran and Morowitz 2006). There is scant research on how involvement in price setting affects consumer behavior. Chandran and Morowitz (2006) suggest that some facets of consumer behavior are different in participative pricing contexts compared with traditional pricing, most notably increased purchase intent in participative scenarios due to high perceived personal control. Differences between participative pricing strategies allow for different levels of uncertainty and effort. For example, an auction normally has a starting point (as well as often having a ceiling or "buy it now" price), and bids can be made repeatedly. However, in a NYOP scenario (e.g., Priceline.com), there may not be any available pricing information and once the buyer's offer is rejected, the purchase cannot be made. In most participative pricing scenarios the buyer is incentivized to offer an amount close to their individual WTP price as the seller still has the option to reject the offer. PWYW is an extreme form of participative pricing where control resides solely with the buyer. Complete control over price may at least partially remove the incentive to pay up to WTP as consumers will receive the product regardless of the amount paid. The current research explores how what is known about consumers' psychological and behavioral reactions to prices in traditional settings applies to PWYW pricing where consumers assume sole control of price setting.

Pay-What-You-Want Pricing

Kim et al. (2009) define PWYW pricing as a purchase situation where the buyer selects any price at or above zero for a product and the seller must accept. The consumer decision making process is quite different from a traditional pricing context. Normally, a consumer's fundamental decision is whether to buy or not buy. In PWYW, the consumer has to select a payment amount from a theoretically infinite span of choices. Neoclassical economic theory has a very simple prediction for behavior in this case. Value, in the financial sense, is maximized when the consumer takes the product for free. To do otherwise would go against rational choice theory. Of course, consumers are not necessarily rational decision makers and they often violate economic theory (Ariely 2009; Poundstone 2010). Although paying something when giving the choice to pay nothing may appear illogical, empirical research may help explain why consumers choose to pay in PWYW contexts.

Published research in PWYW pricing has found that, on average, consumers pay more than nothing in both hypothetical and experimental scenarios (Jang and Chu 2012; Johnson and Cui 2013; Mak, Zwick, and Rao 2010; Schmidt, Spann and Zeithammer 2012) as well as in field studies where actual payments were made (Borck, Frank and Robledo 2006; Gautier and van der Klaauw 2012; Gneezy, Gneezy, Nelson, and Brown 2010; Gneezy, Gneezy, Riener, and Nelson 2012; Kim et al. 2009; León, Noguera, and Tena-Sánchez 2012; Lynn 1990; Regner and Barria 2009; Riener and Traxler 2012). The majority of PWYW research has included face-to-face interaction contexts. Kim et al. (2009) claim that personal interaction is important for the business feasibility of a PWYW model, in spite of numerous successful real-world impersonal business examples,

such as the Radiohead *In Rainbows* album download. Products and services where transactions are not "face-to-face" often represent contexts where PWYW pricing may be less risky to a firm and more profitable. Examples include online distribution of music, electronic books, applications and software and other intangible informational and entertainment content. Although Kim et al. (2009) purposefully select products where the financial exchange is person to person, they also explain the selected contexts used in their studies (buffet lunches, hot beverages and movie tickets) are appropriate due to "high fixed costs but low variable costs."

Similarly, Johnson and Cui (2013) ask participants to imagine speaking with a box office employee and verbally reporting the price they would like to pay. The hypothetical personal interaction forces a social element even though most consumers would be more likely to purchase the ticket online. In fact, in a pretest with a similar population run for the research proposed herein, 92% of consumers reported they would most likely buy a concert ticket online and only 2% reported that they would call a venue to purchase a concert ticket. It would appear that many past researchers have assumed that payments in PWYW contexts are dependent on a personal interaction, yet this may actually not be the case. The present research seeks to replicate the basic finding that consumers will pay more than zero in PWYW and to generalize the findings to a context without personal interaction during the financial transaction. Accordingly, the first hypothesis posits:

H_1: Anonymous PWYW payments are greater than zero on average.

To predict that there will be some level of payment in anonymous PWYW contexts is only a first step. There are a multitude of factors that may affect payment levels. Although studies have found positive payment amounts, significant differences in average payments have been demonstrated based on various manipulations and individual differences. The reader is referred to table 1 for an overview of extent PWYW pricing research.

TABLE 1

OVERVIEW OF PWYW STUDIES AND FINDINGS

Authors	Type	Product Context	ERP Present	Exchange Context	Effects found for*:
Borck et al. 2006	Field Study	Electronic Newsletter (The Tempest) €15	Yes (pay up to normal price)	Anonymous	Benefit/Reciprocity **Age (older)** **Gender (woman)** Income **Perceptions of others' payments**
Gautier and van der Klaauw 2010	Field Study	One night hotel stay (NH-Hoteles) €80-€160	Yes (normal price and higher normal price)	Interpersonal	**Voluntary/involuntary status (Invol)** Satisfaction **ERP** **Gender (Men)** **Age (older)** **Nationality** Loyalty
Gneezy et al. 2010	Field Study	Amusement Park Souvenir Photos ($12.95)	Yes (normal price)	Interpersonal	**Charitable component (SSR)**
Gneezy et al. 2012	Field Study	Souvenir Photos – Amusement Park and Boat($15) Buffet Meal	Manipulated (normal price and average payments)	Both	**Charitable component (SSR)** Observation by others **Image Concerns (low price)** **Anonymity** **Information about average payments** **Age** **Loyalty**
Jang and Chu 2012	Empirical & Field Study	Album Cell Phone Cake DVD Canned Coffee ($0.25)	Manipulated (cost to company and fair price)	NA (hypothetical reported WTP); Anonymous	**Cost information presence** **Social Norm information**

Table 1. (continued).

Authors	Type	Product Context	ERP Present	Exchange Context	Effects found for*:
Johnson and Cui 2013	Empirical	Concert tickets	Manipulated (minimum, maximum and average other)	Interpersonal (hypothetical)	**ERP (minimum, maximum and suggested)**
Kim et al. 2009	Field Study	Buffet Meal Movie ticket Hot beverage	Both (Normal prices sometimes present)	Interpersonal	**Altruism** **Fairness** **Satisfaction** **Loyalty** **Income** **Price consciousness** **Reference price**
León, Noguera, and Tena-Sánchez 2012	Case Study	El trato (Travel packages)	Yes (Normal prices)	Anonymous	**Age** **Package type** **Evaluation** **Regular price**
Lynn 1990	Case Study	Meals	Yes (4 choices for prices)	Interpersonal	**Server Identity** Party Size Meal Type and Variety **Normal Price**
Regner and Barria (2009)	Case Study	Mp3 Downloads	Yes (Range and suggested)	Anonymous	**Anonymity** **Purchase Number and individual difference** Gender **Framing Effects** **Nationality**
Riener and Traxler (2011)	Case Study	Meals	No	Interpersonal	**Mood (Weather)** **Number of customers**

*Bolded factors were found to be significant predictors of price paid in PWYW contexts in at least some conditions.

Factors such as fairness, reciprocity, loyalty, guilt, altruism, frames, reference prices, personal income, nationality, gender, satisfaction, price consciousness, charitable giving/prosocial motives, self-signaling, social pressures, internal and external reference prices have all been identified and/or investigated as predictors of PWYW payment magnitudes. Between product contexts within studies and across researchers, findings on the influences of different factors on PWYW payments have been mixed. Other

researchers featured in the table speculate on influences without testing them empirically or rely on anecdotal evidence only.

What is clear from past research is that buyers will pay something when given the option to pay nothing and that various factors appear to influence the amount paid. The explanations and interpretations of why consumers pay different amounts in PWYW are less clear. There is substantial variation regarding which factors are selected for study and how these factors are measured and/or manipulated across studies. Some factors predicted to influence payments are merely conceptual and speculative; others have been measured and/or manipulated in questionable ways. The first essay of this dissertation focuses on factors that have been demonstrated in traditional pricing contexts to 1) influence WTP prices and 2) can be controlled by the firm. Past research has demonstrated that consumers' perceptions and acceptance of prices are influenced by a firm's decisions. The present research investigates whether voluntary PWYW payments are also subject to firm influence.

Any payment in PWYW deviates from rational choice theory. Therefore, it makes it worth investigating how a firm might influence the factors which may predict how much is paid. Decisions about how much to pay in a PWYW exchange may be quite difficult because such exchanges are currently unexpected and novel to most consumers. When consumers are faced with determining a payment amount, there is inherent uncertainty about what the right thing to do is, what others may do in the same situation and what the best payment amount might be. Two important elements of choice presentation that have been demonstrated to influence decisions made under uncertainty are externally provided numeric information (anchoring and adjustment) and the way in

which the question is asked (framing; Kahneman, Slovic, and Tversky 1982). The following section will review the literature in each area and introduce related hypotheses for their application to PWYW scenarios.

Anchoring and Adjustment

Anchoring is considered a heuristic decision making tool that leads to bias because individuals' responses are systematically and predictably influenced by available numeric information (Tversky and Kahneman 1974). In order to reach a decision, consumers "anchor on," or begin with, a piece of available information and then progress up or down until a plausible or acceptable value is reached (Slovic and Lichenstein 1971). These adjustments to the "correct" level are normally insufficient because the decision maker stops as soon as the value is within an acceptable range rather than continuing to adjust to the correct value (Epley and Gilovich 2006).

In a traditional pricing context, a seller provides the consumer with a price that is then compared to an expected price. A decision is then made about whether or not to buy the product at that price. Rather than deciding to buy or not in a PWYW context, a consumer must now determine how much to pay. Choosing a price is a novel and perhaps confusing situation. When people face uncertain decisions, anchoring and adjustment is a mental strategy relied upon to reduce cognitive effort (Tversky and Kahneman 1974). People are only able to devote a limited amount of energy to any given decision. Anchoring is a tool that reduces time and cognitive effort (Hastie and Dawes 2009). However, anchoring can result in biased or non-optimal decisions (Tversky and Kahneman 1974).

Anchoring is a phenomenon that has been demonstrated across multiple contexts featuring uncertainty such as courtroom decisions (Chapman and Bornstein 1996; Malouff and Schutte 1989), real estate transactions (Northcraft and Neale 1987), health and diagnosis decisions (Brewer, Chapman, Schwartz, and Bergus 2007), and lab estimation tasks (see Chapman and Johnson 1994, for review). For example, when asked to estimate the population of Chicago, most people have a vague idea of an estimate rather than a precise number. When first asked whether the population is less than or greater than 200,000, people tend to report lower estimates compared to those who are first presented with less than or greater to 5 million (Jacowitz and Kahneman 1995). Anchoring explains how estimates and preferences are unduly influenced by initial impressions, perceptions and, in the present case most importantly, values (Chapman and Johnson 1999; Epley and Gilovich 2006). Wilson, Houston, Etling, and Brekke (1996) reported that anchoring effects are observed even when a number is not informative of the estimate. These effects are unconscious and difficult to suppress even when one is forewarned about anchoring biases. Even when incentivized to make accurate judgments, anchoring effects remain (Brewer et al. 2007; Tversky and Kahneman 1974; Wilson et al. 1996).

In a pricing context, anchoring is an important heuristic to consider because prices are by nature numeric information that consumers may anchor on to determine WTP and quality. Given that determining a product's value and making a decision about WTP is a challenging task that involves a numerical estimation, it is not surprising that anchoring effects are present in a purchasing context. Rather than having stable price information about how much products are worth, consumers construct preferences within the

purchase context (Bettman, Luce, and Payne 1998). Consumers do not have a specific preexisting expected and acceptable price for many products. Instead, there is an acceptable range, which may be quite large given uncertainty about the product's value (Drolet, Simonson and Tversky 2000). Simonson and Drolet (2004) found that anchors affect WTP with stronger effects being reported when buyers felt more uncertainty about the exchange. Even prices that are completely unrelated to the immediate purchase have shown anchoring effects on WTP (Nunes and Boatwright 2004).

External Reference Prices

In a PWYW context, a consumer determines a voluntary price to pay rather than simply accepting or rejecting a price. A first step in exploring how consumers select PWYW prices is to test whether cognitive strategies used to evaluate prices in traditional pricing contexts also apply to a self-selected payment. According to Monroe (1979), one of the most critical factors influencing product judgment and purchase is the price. Research suggests that consumers first make a judgment about the value of the offer (the subjective value of the product at that price point) and then decide the action to take. According to adaptation-level theory, all encountered stimuli are judged against an expected level (Helson 1948). In a pricing context, consumers use reference prices as a basis for making judgments and decisions about products (Kalyanaram and Winer 1995; Monroe 1979). When exposed to a price, a consumer automatically compares it to a reference price when assessing whether it is "good" or acceptable and whether or not to make the purchase (Mazumdar, Raj, and Sinha 2005). A reference price is a combination of internal and external information (Mazumdar et al. 2005). Reference prices have also been shown to influence consumers' WTP amounts for products (Mazumdar et al. 2005)

such that consumers exposed to higher reference price information report higher WTP amounts.

There are generally two types of reference prices: external reference price (ERP) and internal reference price (IRP) (Kalyanaram and Winer 1995). Both can be used as a context for current price evaluation (Liu and Soman 2006). ERPs are defined as any price information that is presented during the purchase occasion, such as the original price for an item that has been marked down or an advertised competitor's price (Mayhew and Winer 1992). IRPs exist in a consumer's mind prior to purchase and must be recalled during the purchase occasion (Klein and Oglethorpe 1987). ERPs can be presented in a myriad of ways. An ERP presentation particularly suited for PWYW pricing contexts is a stated normal price. A normal price refers to how much the firm would normally charge for the product or service.

Consumers often use ERPs as anchors (Mazumdar et al. 2005). When a company provides an ERP in the form of an original price (i.e., a listed price for the product that has been reduced), the consumer begins with that value and then adjusts it until an acceptable price is reached. In a PWYW context, the effect of ERP and anchoring on payments has received some attention with research results being mixed. Recent research suggests that although firms may be able to influence PWYW payments by providing ERPs, the presence of an ERP whether low or high may reduce payments overall (Johnson and Cui 2013). Johnson and Cui do not offer an explanation for why consumers are sometimes willing to pay more for something in the absence of numeric information. The idea that ERPs may suppress payment is worthy of further study. Regner and Barria (2009) also found evidence of anchoring effects of a suggested price on prices paid. At

the beginning of data collection on album sales, the suggested price was of the same face value magnitude irrespective of currency (Americans saw $8, English saw £8, Germans saw €8). When the website corrected this by lowering the Euro and Pound suggested prices to reflect the actual value, a corresponding drop in payment amounts was observed.

Along similar lines, Gautier and van der Klaauw (2010) tested for normal price ERP anchoring effects. They found that increasing the stated normal price of a hotel room by €20 increased PWYW payments significantly (on average around €11) for consumers who did not know about the PWYW pricing until after booking. However, the change in ERP did not affect payments for the consumers who were aware of the PWYW promotion when they booked their stay. Consumers who booked rooms knowing they would determine their price were not influenced by an increased normal price, suggesting that this group was somehow able to resist an anchoring effect of normal price. The fact that these consumers also paid significantly less than those making reservations without the PWYW incentive at the time of booking indicates that consumers who seek out PWYW products may be more motivated by getting a deal and able to resist an anchoring bias.

There is also evidence that a posted normal price may not act as an anchor and may even have a negative effect on PWYW payment amounts. For example, bagel buyers paying into an "honesty box" lowered their payments in response to increases in posted prices (Levitt 2006). In this type of scenario, buyers are provided with prices and trusted to put their payments in the "honesty box." It may be that the increased posted price was enough for non-payers to incur a negative moral cost associated with taking the bagel for

free because the honesty box has a stronger norm-based component than PWYW. When the cost of doing the right thing (e.g., paying the normal price) increases, compliance becomes more expensive and the temptation to succumb to self-interest is increased.

Johnson and Cui (2013) found anchoring effects on prices paid for firm set minimum and maximum prices. Participants paid more when given higher (vs. lower) maximum prices. The same pattern was found for low and high minimum prices. Johnson and Cui found a similar effect for what they describe as "suggested" prices, which were operationalized as the amount paid by most people. Payment amounts were influenced by ERPs, yet ERPs reduce payment amounts relative to control conditions where price information is not provided. These studies can be criticized because rather than testing high and low ERPs that represent mere suggestions, a minimum and a maximum price was enforced, thus violating the concept of PWYW where the consumer has complete freedom to pay any price. It would have been more informative to test low and high ERPs in a manner that allows consumers to retain full price determination, rather than using ERPs as floor and ceiling payment levels. Nevertheless, the studies provide insight into how anchoring may operate in PWYW contexts. The reported findings also suggest that not only the face value of the ERP matters, but what that number represents may have effects on the size of an anchoring effect such that an ERP may be overridden, decreased or amplified depending on what the number represents to the consumer.

Different presentations of information can influence choice and judgment (Tversky and Kahneman 1981), thus it useful to replicate using ERPs with different meanings. Three presentations of ERP information will be explored to test anchoring

effects in the current essay. The first is a simple normal price given by the firm. When a firm informs the consumer of what it would normally charge or has charged in the past, that information should act as an anchor. It is expected that PWYW payments will move closer to the anchor based on previous findings in other contexts (e.g., Drolet and Simonson 2004). A suggested price presentation is also tested where the ERP is given as a price that the firm suggests the consumer should pay. A final presentation of company-provided ERP tested for anchoring effects when information about how much other consumers have paid was provided. All presentations are expected to result in payments anchored on the ERP. Formally:

> H_2: Anonymous PWYW payments will be influenced by external reference price information. Individuals exposed to higher (vs. lower) ERPs presented as either a (a) normal price, (b) "suggested" price or (c) average other's payment will be greater.

It may be that consumers cannot help but be influenced by numeric information, no matter how it is presented. All ERPs may simply act as a "default" (Ariely 2009) and consumers may be more apt to select the precise suggested price because it is cognitively easier than coming up with their own price. However, it is also may be that depending on the presentation, the influence of the ERP on PWYW payments may vary. The possibility that the framing, or meaning of the number, affects payments above face value of the ERP is discussed below.

Framing Effects

According to Amos Tversky, "We choose between descriptions of options, rather than between the options themselves" (1996). Framing is defined as the manner in which a choice problem or statement is presented (Tversky and Kahneman 1986). One clue that humans are prone to irrationality is the existence of preference reversals. Judgments, decisions and choices are surprisingly malleable depending on the decision frame, with seemingly trivial differences causing significant shifts in preferences (Tversky and Kahneman 1981; 1986). For example, if choice options are framed as a gain, people tend to act in a more risk averse manner. Conversely, an identical option framed as a loss causes greater risk seeking. Effects have been demonstrated in choice sets, both hypothetical and real, across varied contexts such as medical decisions and financial gambles. Research has also found framing effects in marketing contexts (Campbell 2007; Chakravarti, Krish, Paul, and Srivastava 2002; Green and Blair 1995; Heyman and Mellers 2006; Stone, Yates and Parker 1994). In fact, promotion and marketing communications often capitalize on framing effects when presenting products and/or information to consumers. Over the past thirty years, the definition of framing has been widely expanded from Tversky and Kahneman's original definition. (See Levin, Schneider and Gaeth (1998) for an overview and typology of expanded types of framing effects.)

There is some evidence that presentation choices influence PWYW payments. Consider the case study of "El trato" ("the deal" in Spanish) in which a Spanish travel agency, Atrápalo, offered trip packages under PWYW conditions (León et al. 2012). Although buyers paid greater than nothing on average, the payments for these big ticket

items were very small (a mere 5.1% of market value overall). Additionally, a large portion of individuals paid nothing (46.5%) which is much larger compared to PWYW findings from laboratory settings and other field studies. Although low payments may indicate that PWYW is not as financially feasible as some empirical findings suggest, there is an alternative explanation. Based on qualitative analysis, the authors suggest that framing of the promotional campaign leading up to El trato combined with the wording of the payment exchange were responsible for the low payments. The authors speculate that having customers "grab" a very limited quantity of deals made them feel like they had won a prize rather than purchased something. Other promotional communications made consumers feel like the campaign was a stunt intended not to generate profit, but intended instead to generate publicity. The framing choices made by Atrápalo's marketing agents who described El trato may have inadvertently encouraged lower payments.

In PWYW situations, consumers are making decisions about how much to pay for a good in an unconstrained manner. This does not mean, however, that the firm cannot influence payments based on how information is framed. One factor that can easily be manipulated and has been demonstrated to affect WTP is numeric information. The same face value numeric information may have disparate effects on payments depending on how it is framed. Therefore, a competitor's price may have a differential effect on price paid than a suggested price of the same magnitude because of the meaning associated with the number. Firms have control over the manner in which PWYW pricing is presented to consumers. Making framing choices involves not only how to frame information, but also what type of information to provide or exclude. Price information

such as a normal price, competitors' prices, suggested prices and the price others have paid are all commonly encountered ERPs that may influence subsequent PWYW payments.

The preceding suggests that the same number may have different effects on payments depending on the meaning of that number. To state that all ERPs act as anchors may be too simplistic. Anchoring effects should be tested with numeric presentations that have different meanings. The manner in which the ERP is framed is expected to influence the size of the anchoring effect. Presentation effects may be particularly problematic in the case of Johnson and Cui's research because what they refer to as "suggested price" is actually information about average payments. This may be viewed as a social cue or normative information. A firm generated "suggested price" may have a different impact on payments compared to beliefs about the payments of what others are making. Information about others' payments is a descriptive norm (what other people are doing) and a suggested price from the company is an injunctive norm (what "ought" to be done; Cialdini, Reno, and Kallgren 1990). Research shows that when these two types of norms are in conflict, descriptive norms are more predictive of behavior (Bicchieri and Xiao 2009; Cialdini, Reno, and Kallgren 1990), which suggests that framing an ERP as a descriptive norm may result in a stronger anchoring effect. Predictions regarding norm frames are discussed in more depth subsequently.

The Influence of Normative Information

Yet another difference in what price might be paid for something is when external reference price information originates from other consumers rather than the firm. Rather

than acting as an anchor, a price stated to be an "average person's" payment represents a descriptive norm that capitalizes on social influence. Behavioral economics research suggests that the influence of social norm information may have a stronger influence than information originating from the firm (Bicchieri and Xiao 2009). What people think about others' actions, as well as their thoughts about how others view them, may be especially relevant to PWYW payments. PWYW contexts often include the presence of others. Also, consumers are often required in these contexts to announce their payment decisions to a company employee. Another source of social influence in these contexts is knowledge or beliefs about what others are paying (i.e., descriptive norm beliefs). Given that impression management concerns one's desire to maintain a positive image to others as well as to the self, it would not be surprising that social norms affect payment decisions in PWYW contexts. In PWYW contexts, others may exert unintended pressure to pay a price deemed to be "fair" as well as provide information about what the right thing to do is (i.e., set descriptive norms).

Whereas fairness concerns are motivated by injunctive norms (ought to pay), social cues serve as descriptive norms because they provide information on what others are doing (Cialdini, Reno, and Kallgren 1990). If true, then prices paid should be higher in the presence of others. Even in the absence of others during payment, information about how much others paid should influence payment amounts because descriptive norms have been shown to influence individual behavior in other contexts (Bicchieri and Xiao 2009).

Impression management is a concern in any context where consumers are (or are imagining) paying an actual person or paying in the presence of others rather than

engaging in an anonymous transaction. Therefore, almost all previous PWYW research is confounded with impression management as most research contexts have featured face-to-face interactions. Removing social interaction will allow for a test of whether social cues that are not delivered through the physical presence of others influence payment amounts. It should be noted that anonymous transactions only remove concern for *social* impression management but does not address *self*-impression management concerns that may be a potentially important factor in payment amounts. This will be explored later in this dissertation.

An intriguing finding related to impression management is the souvenir photo field experiment by Gneezy et al. (2010) where PWYW significantly increased purchase rates relative to traditional pricing. In the experiment, half the respondents were told that they could pay any price they wanted, including zero, for a photo (i.e., true PWYW). Respondents in another condition could also pay any price they wanted, but also 50% of their payment would be donated to charity (PWYW + charity). Respondents in the PWYW + charity condition were essentially getting a better deal because not only would they receive the photo, but they would also be donating to charity, the presence of the charity appeal suppressed purchase rate. The authors suggested that consumers want to pay very low PWYW prices, but would feel bad if they paid very little when the charity appeal was attached. Consumers would forgo the purchase altogether rather than either voluntarily paying the ethically "fair" high price or incurring negative feelings about their behavior by paying a low price. The presence of the charity appeal made those who would pay a low amount under strictly PWYW refrain from the purchase in order to maintain their self and social image. The study results begin to explain how impression

management affects PWYW payment amounts. However, the conditions included in this study may be confounded by *social* impression management related to reporting payments to actual employees and by making the purchase in the presence of a tightly bound social group that most likely included family and friends.

Further exploring the influence of others in PWYW contexts, Lynn (1990) found that when paying for meals after consumption, the price selected was not influenced by the number of diners at the table despite the author's prediction that consumers would pay more than necessary in order to avoid appearing cheap. Instead, Lynn found that server identity was a significant predictor of payment amounts. Lynn interpreted these findings as suggesting that consumers cared more about impressing certain servers, perhaps due to the server's attractiveness or ability to intimidate.

In many cases, social and self-impression management are inextricably linked. If one takes a friend out for dinner at a PWYW restaurant, the price paid sends a signal to the friend as well as to the self. When paying anonymously in a PWYW scenario, the only signal sent is to the self. Self-impression management, or appearing to the self as a person who does the right thing, may therefore be just as motivating as the presence of others at the time of payment.

Beliefs about what others pay have been shown to influence PWYW payment amounts. Borck et al. (2006) found that buyers in an anonymous context who paid more thought a higher percentage of other buyers would submit some amount of voluntary payment relative to those paying less or not paying at all. Though not explicitly tested, this finding may suggest that consumers are influenced by social pressure even in

anonymous PWYW settings. For example, Jang and Chu (2012) found that individuals paid significantly less than a control group when they were told that a majority of other buyers tended to behave unfairly ("72% of people intended to pay zero"). Normative information in this case may have acted as a signal of the correct behavior. However, no mean payment difference was observed in a separate experiment between a control condition with no information about others' payments and a condition where participants were informed that 92% of buyers would pay a fair price. It seems that norm-based information acted as a "get out of jail free card" in the conditions with unfair others and had no effect in the fair others condition. Jang and Chu did not test whether information about others acted as anchors or simply suppressed payments when that information was low.

PWYW presents an interesting twist on how descriptive norms might affect payment amounts. Similar to a public good dilemma, a PWYW strategy offers an incentive for free-riding behavior. Free riding refers to enjoying the good without paying. The standard model of private provision for public goods suggests that people only care about the total amount of payment (Bergstrom, Blume and Varian 1986). Those believing that others will pay little or nothing may be motivated to pick up the slack by paying more, whereas those believing others are paying more may be less motivated to pay and be more likely to free-ride (Hardin 1968). Generally, individuals' contributions to public goods decrease as the total amount increases, which is defined in economics as crowding out (Clotfelter 1985). This suggests that buyers led to believe that costs are being covered overall by the high amounts paid by others may actually pay less. This view of free riding (or crowding out behavior) is consistent with Riener and Traxler's (2011) finding that

individual PWYW payments decrease on busy days. Consumers in a packed restaurant may assume many others are covering costs, which reduces the perceived need for higher individual payments. On the other hand, consumers may be motivated to pay more to support the greater good if they know or suspect that others are paying less.

However, there are many cases where individuals violate these economic-based expectations (Andreoni 2006). One well known explanation for donating to a public good is "warm glow" or the good feeling associated with contributing to the common welfare (Andreoni 1990). It is unknown if warm-glow feelings exist in the case of a for-profit business using a promotion like PWYW. One example of a "for-profit" context similar to PWYW is an honesty box that may violate economic predictions. Although honesty boxes enlist a stronger injunctive norm (i.e., what one ought to pay) than true PWYW because suggested amounts are given, what one actually pays is neither observed nor enforced. A study by Levitt (2006) exploring bagel purchases from an honesty box found that higher amounts were paid when fewer bagels appear to have been purchased. Levitt suggested that when buyers could see that few bagels had been purchased, they knew there was little money in the till. As a result, buyers sought to make up for it by paying a higher amount, thus ensuring that the bagels and honesty box would remain in the office.

Judgment and decision making and economics research may suggest competing hypotheses for the effect of external reference price information on voluntary payment amounts. Specifically, framing an ERP as a descriptive (vs. injunctive) norm may result in similar anchoring effects, causing those who are informed that others are paying more to also pay more. On the other hand, the presence of a high descriptive norm price may

result in the opposite effects, lowering payments due to free-riding and crowding out behavior.

The preceding discussion of the influence of normative information suggests that ERP information framed in terms of a social norm may not simply act as an anchor. If it did, an ERP described as the average amount others pay should have an equivalent effect on price paid as would other ERP frames (suggested price, normal price). That is, the perceived amount paid by others should be positively correlated with the buyer's payment amount. However, the experiments described above suggest that numeric information framed as a descriptive norm should have an influence on amounts paid that is not strictly anchor based. It may be that PWYW payment amounts operate in a way other than that suggested by economic theory. The consumer behavior studies outlined here suggest that one can free ride by paying less when others are believed to be paying more or a buyer may choose to pay more when others are believed to be paying less.

An average price paid by others that is presented to consumers by the firm acts as a descriptive norm indicating what the right thing to do it. In contrast, a suggested price provided by the firm without reference to others acts as an injunctive norm. It is expected that a descriptive norm will have a greater effect on behavior than an injunctive norm. Just as Goldstein, Cialdini and Griskevicius (2008) found that providing social norm information was more motivating in changing behaviors than traditional appeals, it is also possible that numeric information framed in terms of a social cue might also have stronger effects on PWYW payment amounts. For example, in a follow-up to the photo study, Gneezy et al. (2012) investigated why purchase rates were suppressed under PWYW compared to fixed and low price conditions. They argued the reason for this is

that consumers forego a purchase altogether because they "feel bad" when they consider paying less than the appropriate price. However, Gneezy and her associates found that if social norm information was provided (the average payment amount for a meal the day before), there was no difference between payments given to a cashier or made anonymously. It seems the social norm information may have acted like a pass that freed the consumer from social impression management concerns.

Many PWYW studies find that people typically will act fairly, but only when it is not too expensive for them to do so (Gneezy et al. 2012; Jang and Chu 2012; Kim et al. 2009). Consumers will pay higher relative payment amounts when they perceive the fair price to be low. For example, Jang and Chu (2012) reported that consumers made higher payments relative to the reference price when the product was less expensive. This effect coupled with buyers' tendency to refrain from purchase altogether in a PWYW context (Gneezy et al. 2012) suggests that as a product becomes more expensive, the temptation to act selfishly by paying less is enhanced. As the financial price of the product and therefore the subjective cost of doing the right thing increases, people appear to either pay less or avoid purchase altogether.

Motivations to appear to the self and others as a "good" person are very influential. Therefore, social norm framing should amplify the anchoring effects associated with nominal information. However, because PWYW is similar to a public goods dilemma, it is possible that free-riding will take precedence over the desire to act justly. Despite this risk, it is expected that high vs. low ERPs framed as social norm information will result in the same traditional anchoring effect as an injunctive ERP frame (H_{2c}). It is further expected that there is an interaction between normative frame

type and anchor value. When anchors are low, there will be no difference between injunctive and descriptive frames. However, because descriptive (vs. injunctive) norms are more predictive when a decision is consequential (i.e., the ERP is high), high descriptive (vs. injunctive) norm anchors will exert a stronger influence on payment amounts. High anchors framed in terms of a social cue will result in payments closer to the anchor price than those framed as company provided information. Formally:

> H_3: When external reference prices are high, an interaction is expected such that payments are closer to the provided ERP when it is framed as a descriptive (vs. injunctive) norm. No such difference is expected when the ERP is low.

Setting Minimums and Maximums

It is possible in practice to have an ERP in a purchase setting that does not represent normative information, but instead as a ceiling or a floor amount for PWYW payments. Based on what is known about anchoring effects, it is possible that setting a "floor," or minimum price may have unintended negative effects on PWYW payment amounts. That is, consumers may be more likely to anchor on the minimum price recommendation in deciding how much to pay in a PWYW context. On the other hand, maximums – for which there seems to be little precedence in business practice –may increase average PWYW payments via anchoring effects.

> H_4: Setting a maximum (vs. minimum) payment amount will result in higher (lower) payments compared to a true PWYW where no payment constraints are given.

Internal Reference Prices

The final study in Essay 1 explores anchoring effects of recalled and explicitly stated internal reference price information. Internal reference price (IRP) information refers to the monetary expectations a consumer has about a product's price prior to the focal purchase and independent of externally provided reference price information (Mayhew and Winer 1995). IRP is distinct from ERPs presented in the first three studies. All numeric information in the previously described studies has been externally provided rather than self-generated. It is possible that when a consumer actively recalls and reports IRP information, that number will affect amount paid more than when an IRP is not explicitly stated. Additionally, whether ERP information remains a predictor of payment amounts in the presence of recalled and reported IRP will give insight into the relative influence of company supplied information compared to an individual's preexisting price expectations. It should be noted that some level of IRP information by definition exists in all transactions, and therefore was internally available to consumers in the previously described studies. Study 4 tests the effect of recalled and reported IRPs on payments and explores the relative strengths of IRP and ERP information when both are present in the PWYW purchase context.

Investigating internal reference price is more complicated than external reference price because IRP is a latent construct that exists in the mind of each consumer, which makes obtaining a meaningful and accurate measure difficult (Mazumdar et al. 2005). Research in the PWYW domain has used average prices paid in control conditions (those without ERPs) as a proxy for IRPs as a basis of exploring its influence on PWYW payments (Johnson and Cui 2013). This practice is problematic because it assumes

consumers are paying their full expected prices, which may not be the case for all consumers. It is difficult to understand how IRPs influence judgments and decisions even in traditional pricing contexts due to consumer heterogeneity. The current research explores IRP influence by comparing payments made in the presence of reported IRP information to those made without recall. The act of collecting IRP information is likely to bias subsequent payments and this notion is tested in study 4.

Although IRPs contribute to price judgments, consumers' valuations of a product or service are often uncertain and rely on external cues (Bettman, Payne and Luce 1998). When no external reference price information is available, price articulation proceeds in a two-stage process where the range of feasible prices is first evoked and then a price corresponding with maximum personal utility is determined (Chernev 2003). The process is much more effortful than articulating a WTP based on an external reference price providing normative information, because one must generate their own starting estimates.

The relative influence of IRP to ERP information in forming judgments and guiding behavior has been explored in traditional pricing contexts. In order for an IRP to be used in forming a judgment, it must be accessible in memory (Biehal and Chakravarti 1983) and perceived to be appropriate in the given purchase context (Feldman and Lynch 1988). Mazumdar and Papatla (2000) reported differences in the relative weights given to IRP and ERP information in brand selection. They found that customer heterogeneity in areas such as brand loyalty and propensity to buy during promotions, as well as product level differences such as absolute price level and frequency of discounting, affected the relative importance of IRP in brand selection in different ways. In short, consumers use

both IRP and ERP, but the weights assigned to each vary based on individual and product differences.

Accessibility-diagnosticity moderates the relative use of IRP and ERP in product judgments (Mazumdar et al. 2005). When IRP information is more difficult to remember or construct, a consumer sees it as less diagnostic than ERP information in determining WTP. IRPs are subject to accessibility or "ease of retrieval" bias in that past pricing information is deemed diagnostic only if easily recalled. Consequently, because accessible information is more diagnostic, it has a greater influence on judgments (Menon and Raghubir 2003). Interestingly, Monroe and Lee (1990) found that past prices that were not immediately accessible were found to nevertheless influence judgments at an unconscious level for low involvement purchases. Taken together, the results of these studies suggest that the act of recalling and reporting IRP information will have a stronger influence on judgments and decisions than will IRP information that is not explicitly called to mind and stated by the consumer. It has not been tested in previous research whether the act of recalling and reporting IRP will result in effects on prices paid that are stronger than demonstrated effects of an ERP. Formally:

> H_5: When internal reference price (IRP) information is recalled and explicitly reported in the absence of an ERP, IRP information will be positively correlated with payment amounts.

Johnson and Cui (2013) report mixed results for the relative influence of internal and external reference price information in a PWYW context. When the ERP presented was a minimum price, respondents' payments were closer to the ERP than to the IRP

(measured as the average price paid in a control condition). Yet, when the ERP presented was a maximum price, consumers' payment amounts were closer to the IRP than to the ERP. These findings suggest that consumers simply select whichever value is lower. When an ERP is presented as a maximum price that is greater than an IRP, the latter is a better predictor. In contrast, when an IRP is higher than an ERP that is presented as a minimum price, then an ERP is more predictive. Also concerning in their study was the use of an average price paid in the control (i.e. no ERP present) PWYW condition as the IRP. It should not be assumed that participants in the control conditions opted to pay full IRP. Rather than describing the relative influence of IRP, Johnson and Cui's studies simply suggest that IRP information was overlooked in favor of externally provided numeric information when financially attractive to do so.

In order to test whether an ERP or an IRP has a stronger influence on PWYW payment amounts, study 4 manipulates high and low ERP anchors in addition to recalled IRP information. In a test of anchoring effects on self-generated numbers versus experimentally provided numbers, Epley and Gilovich (2001) found that people report thinking first of an estimate and then moving up or down from there, thus resulting in an anchoring effect for self-generated numbers. Epley and Gilovich selected estimation tasks that assumed most individuals would not know the exact answer for but would likely have the same starting point for estimating the correct answer. For example, if asked what year Washington was elected president, 1776 is a plausible starting value. This is similar to a consumer determining a PWYW payment amount. Most consumers have a similar fuzzy estimation of how much the product is worth and then adjust that estimate to the desired payment amount. Anchoring effects demonstrated by Epley and Gilovich suggest

that IRP information explicitly recalled prior to reporting WTP in PWYW should act like ERPs, thus biasing responses. However, there is a possibility that exerting the mental effort necessary to self-generate and report an IRP will influence prices paid in a manner not biased by anchoring. Specifically, the act of recalling an IRP may have an influence on payments in addition to an anchoring effect because the consumer is more engaged in critical reasoning about the fair price. Increased effort could therefore result in payments that are higher (or lower) regardless of ERP anchors. The influence of a recalled IRP on prices paid in combination with ERP information is explored in study 4.

In the previous studies, consumers possessed internal and external reference price information, both of which are assumed to influence prices paid. Studies 1-3 suggested that internally held IRPs that are not explicitly defined are less influential than externally provided numeric information in a PWYW purchase context. If ERPs consistently influence payment amounts, then internally held IRPs that are not declared explicitly may be thought as having little effect on those payments. Study 4 explored how pre-existing expectations about normal prices charged and perceptions of value influence PWYW payments in the presence of ERP information. Although IRPs are by definition present in consumers' minds, the IRPs were not made salient or measured in studies 1-3. Study 4 tested whether explicitly recalled and reported IRPs will influence PWYW payments in a manner similar to ERPs. If the effects of IRPs and ERPs are consistent (both cause anchoring effects) then the result would be additive.

It may be that recalled and reported IRP information is predictive of payments in PWYW contexts in the absence of ERPs. On the other hand, ERPs may remain the driver of payments even when IRPs are actively recalled. Biehal and Chakravarti (1986)

demonstrate that in brand selection, information stored in memory is underutilized compared to external information that is present during the decision task. Based on reference price research, it is expected that ERPs will have a stronger influence on prices paid compared to IRPs, even when IRP information is explicitly recalled and reported.

> H_6: When internal reference price information is recalled and explicitly reported in combination with an ERP, the ERP will be a better predictor of amount paid in a PWYW context.

Findings of studies 1-4 were expected to demonstrate anchoring and norm framing effects in a PWYW context. Although many consumers voluntarily pay more than what is required when given complete freedom to pay whatever they want, they may nevertheless be influenced by numeric information provided by the firm. The face value of a number and the manner in which it is presented may subtly guide decision making in an uncertain context. The following section outlines the proposed methodology for these studies, followed by results and a brief discussion of each study. Finally, a summary of the studies reported in essay 1 will be provided as well as a rationale for essay 2.

OVERVIEW: STUDIES 1-4

Hypotheses in essay 1 are tested in a set of four studies. All study contexts involve products/services that feature no social interaction. Studies were approved by the Committee for the Protection of Human Subjects (CPHS), which serves as the University of Oregon's Institutional Review Board (IRB). Below the methods, stimuli, procedures

and findings are explained in detail. Table 2 provides an overview of studies and the related hypotheses.

TABLE 2

OVERVIEW OF HYPOTHESES TESTED: ESSAY 1

Study	Description	Hypotheses Tested
1	Normal Prices	H_1, H_{2a}
2	Injunctive v. Descriptive Norms	H_1, H_{2b}, H_{2c}, H_3,
3	Constraining PWYW Payments	H_1, H_4
4	Internal Reference Price Effects	H_1, H_5, H_6

STUDY 1: ANCHORING EFFECTS OF INJUNCTIVE ERPS ON PWYW PAYMENT AMOUNTS

The purpose of study 1 is to replicate and extend findings from previous PWYW research where payments above zero have been found. In addition to demonstrating positive voluntary payments, study 1 extends research from traditional pricing contexts to demonstrate that anchoring effects are observed when consumers have complete control over payment amounts. In traditional pricing contexts, external reference prices can influence reported WTP price for goods (e.g., Ariely et al. 2003). It is expected that anchoring effects will be observed even when consumers have the option to pay nothing for the product. Study 1 tests H_1 and H_{2a} and the methods are described below.

Method

In 2011[1], 151 undergraduate business students (mean age = 21.32 years, 60.27% male) enrolled in marketing courses at a large northwestern university took part in the study in exchange for partial course credit. The study manipulated an external reference price (ERP) framed as a "normal" price as either high or low between subjects. All ERPs provided injunctive norm information in this study.

Stimuli

Study 1 utilized a fictitious product in order to avoid brand effects and to control for prior experience. An intangible service was created that would be naturally purchased in an anonymous online context, be relevant to the sample population and have very low incremental cost. The following description for this "new" service called CLOUDX was provided:

> We are releasing CLOUDX, a service that lets you bring your photos, music, docs, and videos anywhere and share them easily. Never email yourself a file again!
>
> This means that any file you save to our service will automatically save to all your computers, phones and even our website, CLOUDX.com, which you can access from anywhere, anytime. It is compatible with all major smartphone platforms. CLOUDX also makes it super easy to share with others, whether you're a student or professional, parent or grandparent. Even if you accidentally spill a latte on your laptop, have no fear! You can relax knowing that we always have you covered, and none of your stuff will ever be lost.

[1] At the time these studies began running CLOUDX likely seemed more novel and attractive than it may be currently. Although services like DropBox existed, they were much less popular.

The CLOUDX basic package is offered on a monthly contract, which can be cancelled at any time and offers you 100GB of storage.

Pretesting CLOUDX

Two separate tests of the CLOUDX stimuli were run in order to assess interest level, expected price charged (internal reference price) and willingness to pay in a traditional price setting for this fictitious service offering. Because additional studies described in essay 2 used the CLOUDX stimuli, related data were collected over approximately a two year period. It was important to confirm that the product was still relevant and to monitor changes in the perceived value and expected pricing for this new technology product. During this time period (mid 2011 to late 2013), numerous real services similar to CLOUDX were launched and/or gained popularity such as Dropbox, Apple's iCloud, Google Drive and Microsoft's SkyDrive. A pretest in summer 2011 was repeated as a "post" test of sorts in winter 2013. This retesting was to ensure that the increased popularity of free cloud-based storage software did change perceptions of value significantly over time.

The pretest run in 2011 with 82 participants from the same population as future studies (undergraduate business students) indicated that levels of interest in CLOUDX were sufficiently high. A 5-item scale for attitude towards CLOUDX (Cronbach's α = .845; see Appendix A1 for measures) indicated a mean interest level of 5.03 out of 7 (*SD* = 1.10). A measure of interest in learning more about the product was 5.00 on a 7 point Likert scale (*SD* = 1.58). Participants estimated that the company would charge $17.25

per month[2] for CLOUDX service (*SD* = 12.39, ranging from $0.00 to $50) and that they would be willing to pay $6.19 (*SD* = 6.54, ranging from $0.00 to $31), or approximately 1/3 of the expected price charged. These results indicate that although interest level was only moderately high, participants may have reported less interest because they assumed the product would be priced more than they considered it to be worth.

Another test was run in early 2013 after all data collections using the CLOUDX stimuli were nearly completed. This "post" testing was to ensure that perceptions of value had not significantly changed over time. A total of 66 participants from the same population completed the post-test. Mean overall attitude toward the service in 2013 was 4.57 (*SD* = 0.97) measured by the same scale described previously, which indicates a significant decrease in attitude from the 2011 pretest ($t(146) = 2.739$, $p = .007$). This is not surprising due to the introduction of similar products over the time period. However, participants reported a very similar willingness to pay for CLOUDX. Mean WTP in 2013 was $6.16 (*SD* = 6.04, ranging from $0 to $35), which was not significantly different then WTP in 2011 ($t(69) = -1.344$, *n.s.*)[3]. Although WTP remained consistent over the time period, because attitude did change it is included as a covariate in the main studies reported below.

[2] Three participants' expected prices charged were detected as outliers ($80, $80 and $90) per the outlier labeling rule (Hoaglin, Iglewicz and Tukey 1986). Their values were Windsorized to the mean plus 2 SDs (Fields 2005). Because WTP was reported as a percent of the expected charge these values were appropriately adjusted as well.

[3] Only a subset of participants from both tests were asked WTP without any external price information, resulting a smaller n.

Procedure

In the main study, participants were informed that a company that wished to remain anonymous was interested in feedback on a potential new service offering. Next, all participants read the same description of CLOUDX provided above and were quizzed as an attention check on the components of the service offering (see Appendix A2). Although a small percentage of participants missed the attention check question (11%), they were nevertheless retained in the analysis. Missing the attention check resulted in a pop-up informing them they answered incorrectly which was meant to increase attention moving forward. Next, participants reported how interested they were in learning more about CLOUDX, their likelihood of considering purchase and their attitude about CLOUDX (same as pretest, see Appendix A1). Participants were then informed that the company providing CLOUDX was considering selling it under a PWYW strategy. The exact text follows:

> The company that makes CLOUDX is considering offering this service under a Pick Your Price strategy, which allows customers to completely set their own prices for products. This means that you are able to select any price that you are willing to pay and you will receive the service, regardless of the amount that you select, from zero to a theoretically infinite amount.

Participants were then asked to imagine that they were interested in purchasing CLOUDX and had gone to the website to find out more about the service. They were instructed to further imagine that they decided to try the service for one month. Participants were randomly assigned to either a low or high external reference price condition that was framed as the amount the company would charge for CLOUDX under

normal pricing conditions in all conditions. Anchors were set to approximately plus or minus one standard deviation (SD = 10.63) from the mean expected price as reported in the pretest. Both high and low anchors were adjusted slightly so as to seem more natural to participants (e.g., $24.99 rather than $26.31). When participants imagined looking for the price of the service on the website, they were given the following payment instructions: "How much do you think CLOUDX is worth? Although CLOUDX will normally be offered at $9.99 ($24.99) /month, we are offering you the chance to pay whatever you want." Participants then indicated the price they would like to pay, which is the main dependent variable of interest. They also completed an open-ended qualitative measure reporting their thoughts and feelings about selecting their own price.

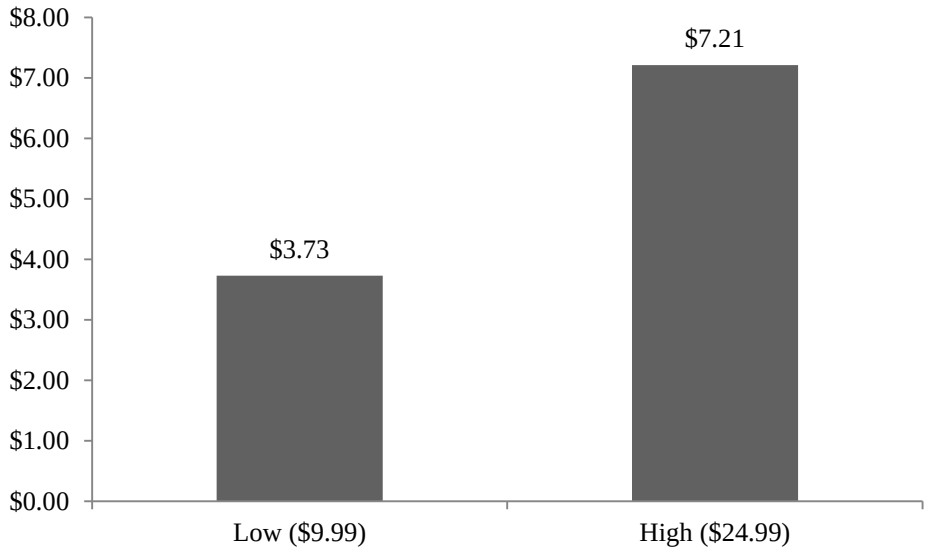
Results

Similar to those in the pretest, participants (n = 151) reported moderately favorable attitudes about CLOUDX service (M = 4.96, SD = 0.96). The mean voluntary payment for CLOUDX was $5.79 ($SD$ = 5.51). Although all participants had the ability to pay nothing, only 31 individuals (20.5%), opted to do so. Reported voluntary payments ranged from zero (or "free," as euphemistically reported by some) to a high value of $20 per month. A one-sample t-test indicated that the mean voluntary payment (M_{all} = $5.79, SD = 5.51) was greater than zero on average, $t(151) = 12.968$, $p < .001$. An independent sample t-test with anchor amount as the independent variable and payment amount as the dependent variable revealed a main effect of anchor level, $t(150) = -4.042$, $p < .001$. As shown in figure 1, participants in the high condition reported significantly higher payments (M_{high} = $7.21, SD = 3.59) compared with the lower anchor (M_{low} $3.73, SD = 6.13).

The qualitative responses provided further insight into thoughts and feelings regarding the strategy of PWYW pricing. Coding of the open ended responses revealed 68 participants that commented on the pricing strategy, rather than on the product/service itself. Many participants chose to comment on PWYW from a business perspective.

FIGURE 1

PWYW PAYMENT MEANS BY NORMAL PRICE ERP CONDITION: STUDY 1



Some felt PWYW was a wise strategy for reasons such as gauging how much people are willing to pay and to stimulate initial interest in the new service offering. Others felt it was a poor strategy for the bottom line, mainly based on the belief that very few consumers will voluntarily pay any amount. From a consumer perspective, not all participants liked the ability to self-determine price, which was somewhat surprising. Only 11 out of 68 participants (16%) reported positive feelings related to picking their price (for example, “that would be awesome” and “LOVE IT!”). An equal amount of participants reported confusion or negative feelings such as “I would feel guilty not paying for it” and “it’s unfair to people who would pay more.” Many participants were

skeptical that consumers who paid little or nothing would actually receive the same service as those paying higher amounts.

Discussion

Study 1 findings indicate that consumers will pay something in anonymous PWYW contexts in support of H_1. Further, the payments are influenced by external information provided by the firm. As expected, consumers used the numeric information presented as the normal price as anchors that guide payment decisions. The study provides preliminary evidence that consumers will use numeric information present in PWYW exchanges as anchors. It is important to explore whether the meaning of the information will affect payments differently. Additionally, the qualitative responses provided some insight into the thoughts and feelings consumers have about PWYW. Surprisingly, the ability to self-determine payments is not universally liked.

STUDY 2: ANCHORING EFFECTS OF ERPs FRAMED AS INJUNCTIVE AND DESCRIPTIVE NORMS ON PWYW PAYMENTS

The purpose of study 2 was to replicate and extend findings from study 1. It was expected to replicate positive payments and anchoring effects in a different product context using two different ERP frames. ERPs framed as either an injunctive norm ("suggested" price) or as a descriptive norm (price that the average other has paid) were expected to demonstrate anchoring effects on payments.

Study 2 also tests normative effects based on how the numeric information is framed. Descriptive norms are set by others are doing and injunctive norms are based on what one *ought* to do. Because descriptive norm (vs. injunctive norm) information has been shown to be more predictive of behavior (Bicchieri and Xiao 2009), it is expected that social cue framing of ERP will result in payments that are more aligned with the anchor.

Method

In early 2013, 199 participants (mean age = 20.67 years, 52.32% male) completed the study in exchange for partial course credit. The study utilized a 2 (norm frame: injunctive, descriptive) x 2 (ERP: low, high) factor between subjects design. A control condition with no ERP provided was also tested[4]. Participants were randomly distributed across conditions.

Stimuli

Participants were instructed to imagine buying a concert ticket for their favorite musician or band. Concert tickets were selected due to their anonymous and online nature of distribution, small incremental cost, relevance to the population (university students) and previous use in a PWYW study (Jang and Cui 2012). Rather than imagining speaking to a representative at the venue by phone as was done by Jang and Cui (2012), the current study had participants imagine buying the ticket online from the venue's website.

[4] An additional condition (n=33) was given an extremely high ($99.99) suggested price. The mean payment in this condition ($M_{veryhigh}$ = $52.56, *SD* = 33.52, ranging from $0 to $125).

Pretesting Concert Tickets

In order to assess the relevance and appropriateness of the purchase context, a pretest of 65 participants from the same population as used in the main study was conducted. Also, expected prices and maximum willingness to pay measures were included to give insight into individuals' internal reference prices. The pretest supported assumptions that the product was familiar and desirable to participants, as well as the online context being the most likely manner of purchase (see Appendix B1 for complete response options). The results indicated that attending a concert two or three times a year was the most common response (36.9%) and over 72% reported attending a concert at least once a year. It was important to ensure that buying the ticket online was believable and common because the anonymous aspect of payment is a necessary component in study 2. As expected, over 90% of participants stated that if they were to buy a concert ticket in advance, they would most likely buy it online through either the venue's website or a ticketing website[5] (see Appendix B2 for complete item). Only one participant (1.5%) reported that calling a representative would be their most likely approach to making the purchase. When asked how likely they would be to attend if their favorite band's concert was performing nearby on a day they could attend, over 50% reported they would be "extremely likely" to attend (M = 6.23, SD = 1.24 on a 7 point Likert scale; see Appendix B3). The pretest also collected expectations of the price for a ticket to see their favorite musical act in concert, as well as the most they would be willing to pay for that ticket (see Appendix B4). Participants expected the mean price charged for a ticket to be $58.86

[5] Four participants who reported never having attended a concert were not asked this question.

(*SD* = 24.90, ranging from $20 to $100)[6] and the mean willingness to pay (maximum price) as $87.48 (*SD* = 35.87, ranging from $30 to $160)[7]. A paired sample t-test demonstrates the expected price for a favorite band ticket is significantly less than their maximum WTP for that ticket ($t(60) = -9.909$, $p < .001$). Participants' WTP for a popular, nationally known band was also collected in order to estimate perceptions of the standard price for a concert ticket.

Procedure

Participants were asked to imagine that a new music venue was opening in their town for nationally known musical acts and that they were interested in learning more about it. They were asked to imagine visiting the venue's website and discovering that a favorite band or musician was performing on a date that they would be able to attend and that tickets would go on sale the next day. Participants were asked to report the name of the band to increase their involvement and to ensure that they were imagining themselves in a specific situation. All participants reported an actual musician or band. Qualtrics programming was used to auto-fill the selected band into following prompts. They were asked to further imagine that they returned to the website the following day to purchase a ticket. Next, participants saw screenshots of a payment page that contained slightly different information depending on the condition (see Appendix B5 for examples of all conditions). Participants in the control condition read the following:

[6] Three participants' outlier expected prices were Windsorized to the mean plus 2 SDs.

[7] Three WTP outlier values were adjusted in the same manner described above.

> How much do you think the ticket is worth?
>
> Our pricing policy lets *you* decide the amount you would like to pay for your ticket. All tickets are general admission so the price you pay will not affect where you sit at the concert. Once you enter your price, you can download your ticket or select to place it on will call to pick up the night of the show. You can choose any price to pay for your ticket.

Participants were randomly assigned to either an injunctive norm frame condition that presented a "suggested" price from the venue or a descriptive norm frame condition in which they were informed approximately how much most people decide to pay. The injunctive frame condition included one additional sentence at the end of the above control condition screen stating "We suggest you pay at least ($X) for your ticket." The amount suggested was manipulated between subjects as either $9.99 (low) or $24.99 (high). In the descriptive norm frame conditions a sentence stating that "Most people decide to pay around ($X)" was added following the second sentence in the control condition text. Others' payments were manipulated as $10 (low) and $25 (high) consistent with the injunctive norm, but rounded to seem more natural. Next, everyone indicated how much they would pay for their ticket. Length of time spent on the payment page was also collected.

After reporting their price paid, participants completed a thought listing task in which they were asked to describe the thoughts and factors they considered when determining the price paid and whether those thoughts were negative, positive or neutral. Next, participants rated the importance of six factors such as "paying a fair amount" and "personal financial situation" were in their decision making process. These factors were

selected based on the research questions and findings from qualitative responses during pretesting (see Appendix B6 for full list of factors and scale points). Participants also reported their best guess of what others would pay (only in the injunctive conditions as they were explicitly given this information in the descriptive norm conditions). Additional items measured the difficulty and effort involved in selecting a price and how much they liked the experience of selecting their own price. Next, participants answered a set of items regarding their effort level in the decision making process (see Appendix B7 for items). Participants reported whether in general they would prefer to select their own price or decide to accept or reject a fixed price and explained why. Finally, participants answered an open-ended response measuring qualitative thoughts and feelings about PWYW pricing generally. In addition, they answered a few questions about their concert attendance frequency and likelihood. Participants were thanked for their time and effort in completing the study.

Results

The mean voluntary payment for a concert ticket was reported to be $27.25 (*SD* = 19.36)[8]. In contrast to study 1, very few participants (less than 2%) opted to pay nothing for the ticket. Reported payments ranged from "free" to $100. Payments were greater than zero on average, $t(165) = 18.133$, $p < .001$. An analysis of variance considering the four target conditions revealed a significant difference between conditions, $F(3, 129) = 8.828$, $p < .001$, see table 3. A main effect of ERP level was observed, $F(1,129) = 16.875$, $p < .001$. Participants who were provided with higher numbers in the payment context

[8] Four participants reported outlier payment amounts identified by the outlier labeling rule. Their payments were Windsorized to 2 SD above the cell mean.

(M_{high} = \$31.07, *SD* = 19.64), made significantly higher payments compared with those who were provided lower numbers (M_{low} = \$19.68, *SD* = 12.93). Additionally, there was a main effect of norm framing ($F(1, 129) = 6.973$, $p = .009$) such that those who were given information about what others pay made significantly lower payments ($M_{descriptive}$ = \$21.80, *SD* = 14.45) compared to those who were give a suggested payment from the venue ($M_{injunctive}$ = \$28.99, *SD* = 19.60). Finally, there was a marginally significant interaction between ERP level and norm framing, $F(1, 129) = 2.936$, $p = .089$.

TABLE 3

MEANS OF PWYW PAYMENT AMOUNTS: STUDY 2

Means (SD) table

		Norm Framing		Total
		descriptive	injunctive	
ERP level	low	\$18.34 (13.35)	\$20.94 (12.59)	\$19.68 (12.93)
	high	\$25.06 (14.88)	\$37.27 (22.12)	\$31.07 (19.64)
Total		\$21.80 (14.45)	\$28.99 (19.60)	**\$25.42 (17.55)**
Control				\$34.61 (24.35)

Participants who were given a high suggested price (an injunctive norm) paid more than those who were provided the same number framed as the average payment (a descriptive norm; $p = .013$) and no such difference was observed in the low ERP conditions ($p = .914$). It should be noted that means in all cells were at least directionally above their relative provided reference prices. See figure 2 for means.

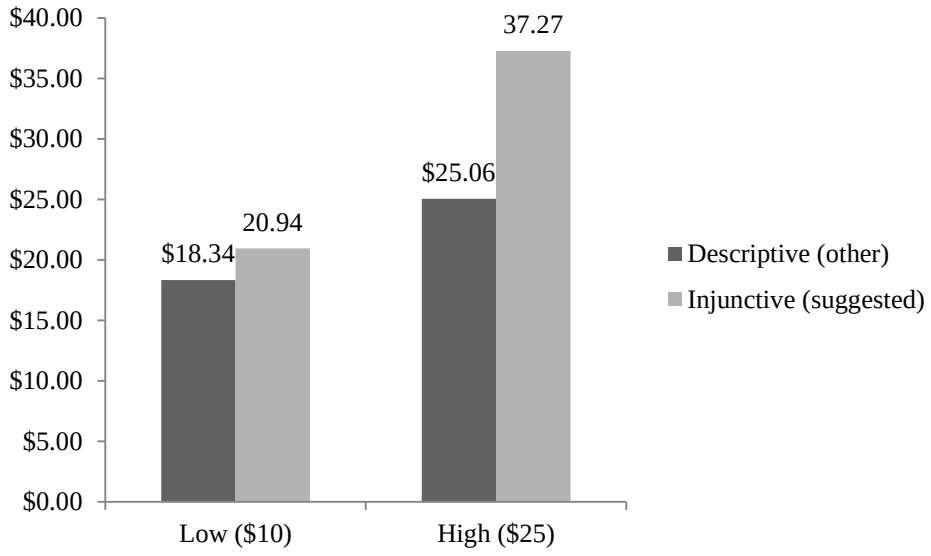
A post hoc test compared the control condition (no ERP and therefore no normative frame) to the target conditions. Providing no ERP information yielded significantly higher payments ($M_{control}$ = \$34.61, *SD* = 24.35), compared to both the low

injunctive ERP condition (M_{low_inj}= $20.94, *SD* = 12.59), p = .020 and the low descriptive ERP condition (M_{low_desc} = $18.34, *SD* = 13.35), p < .004. There was no significant difference between the control and either high ERP conditions, ps > .2.

Qualitative responses were also analyzed. Participants in the five target conditions (n=166) reported a total of 521 discrete thoughts/factors. Based on self-coded valence, participants were positive about the scenario in general (M = 0.546, on a scale of -1 to 1).

FIGURE 2

PWYW PAYMENT MEANS BY NORM FRAMES AND ERP CONDITION: STUDY 2

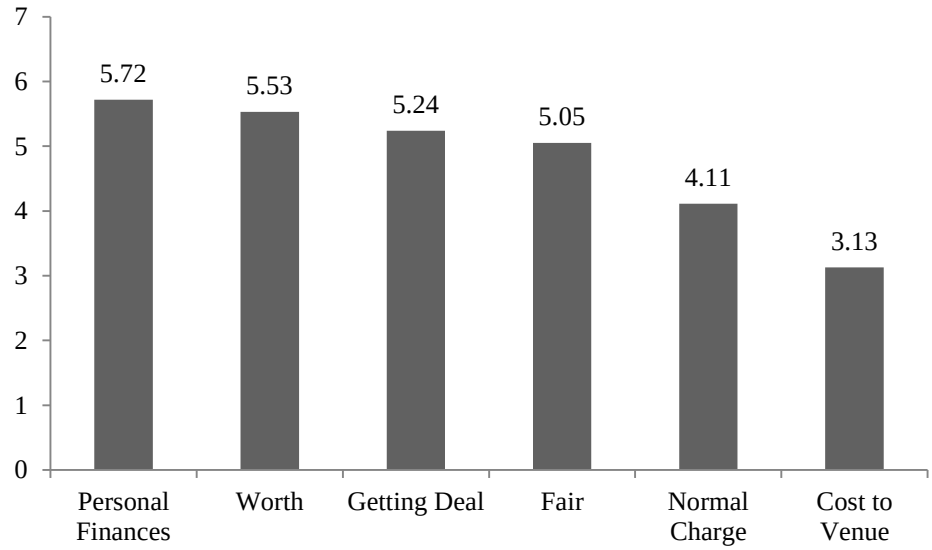


Due to the variation in open-ended responses in study 1, participants were further asked to indicate whether their responses were indeed regarding the factors that went into determining their payment amount or about something else (which they often were). This reduced responses to 245 discrete thoughts about voluntary price determination, the majority of which were positive (M = 0.482, SD = 0.71).

In addition to open-ended responses described above, subjects also rated the importance of six provided decision making factors (again, see Appendix B6 for factors). Analysis of variance on the importance of decision making factors across the five target conditions revealed no significant differences in importance in determining payment amount between conditions on any factors except how important "how much you think the venue would normally charge," $F(4,161) = 9.462$, $p = .016$. Please see figure 3 for overview. A post hoc test revealed that participants in the control condition rated this factor as significantly more important ($M_{control} = 4.818$, $SD = 1.55$) compared to those in the high injunctive condition ($M_{high\_inj} = 3.412$, $SD = 1.89$), $p = .01$. This indicates that when the venue provided information about the charge in the form of a high suggested price, it was discounted in the decision making process. Analysis of variance revealed that there were significant differences in importance of decision making factors, $F(5,990) = 65.573$, $p < .001$.

FIGURE 3

IMPORTANCE OF DECISION MAKING FACTORS: STUDY 2



Post hoc testing revealed that self-focused factors such as "My own personal finances" and "Getting a good deal" were significantly more important in determining payments compared to more externally-focused concerns such as "cost to venue of putting on the show" and "how much the venue might normally charge." See table 4 for mean differences between self-focused and firm-focused factors.

TABLE 4

T-VALUES FOR DECISION MAKING FACTOR IMPORTANCE: STUDY 2

			Firm-Focused Factors		
		Pairwise t-test (*p*)	Fair	Normal charge	Cost to Venue
Self-Focused Factors		Personal Finances	3.868 (<.001)	9.304 (<.001)	14.983 (<.001)
		Worth	2.753 (.006)	5.436 (<.001)	13.868 (<.001)
		"Good Deal"	1.115 (.265)	6.551 (<.001)	12.231 (<.001)

There were no significant differences between conditions on how difficult it was to determine a price and how much participants liked determining their own price. Determining a voluntary payment was judged to be both relatively easy (M_{all} = 4.47, *SD* = 1.45) and enjoyable (M_{all} = 5.34, *SD* = 1.43), both measured on 7 point scales. Cognitive processing style (System 1 or System 2) was also measured on a four-item scale and there were no significant differences across all conditions. Participants in all conditions spent statistically equal time selecting payments (M_{all} = 7.88 seconds, *SD* =

5.81) and indicated equal agreement in "going with the gut," "deciding quickly," and "considering several factors." However, participants reported disagreement with the statement that they "thought a lot" about how much they should pay. See table 5 for means. Finally, participants indicated they would be quite likely (M_{all} = 6.27, *SD* = 0.98) to buy the concert ticket described in the scenario in their real life.

TABLE 5

MEANS FOR PROCESSING MEASURES: STUDY 2

Accuracy of Statements in PWYW	Means (SD) 7 pt strongly disagree to strongly agree
I just went with my gut feelings	4.88 (1.48)
I decided very quickly	5.20 (1.45)
I considered several factors when deciding what to pay	4.78 (1.53)
I thought a lot about how much to pay	3.70 (1.57)

Discussion

Results from study 2 show continued support for H_1 indicating that consumers are willing to voluntarily pay in anonymous settings. The main effect of the ERP level also provides continued support for anchoring effects on voluntary payments using different frames (H_{2b} and H_{2c}). It appears that numbers in PWYW settings influence payments whether they are described as a suggestion from the company (injunctive) or as the amount others are paying (descriptive). However, results further indicate that the meaning of numbers in PWYW payment contexts is influential beyond simple framing effects. If consumers anchor on the face value of the ERP alone then no differences would be observed based on how that number is framed. Frame also had a significant

main effect in that those who saw ERPs framed as injunctive norms paid more than those who saw ERPs framed as descriptive norms. Higher payments in injunctive frames may be due to the expected price for a concert ticket being greater than $25, indicating expected prices may have influenced payments more than firm suggested price.

Most interestingly, the moderating effect of frame on payments revealed that framing effects were observed only when the ERP was high, thus supporting H_3. When the ERP was low, payments were the same regardless of whether that number was a suggestion from the firm or information about what others were paying. However, because payments in low ERP conditions were significantly less than those made in the control condition, this suggests that presenting a low number in a PWYW payment context may actually suppress payments on average. This finding is important to firms who may be tempted to suggest a lower payment in order to seem fair or to avoid seeming greedy and facing potential backlash from consumers. Importantly, this may also affect firms considering placing low limits on PWYW payments (such as $2 minimums rather than true PWYW) to avoid zero payments. This possibility will be explicitly explored in study 3.

When ERPs were high, average PWYW payments were significantly different between frames. When $25 was framed as a suggested amount from the venue, participants paid significantly more than when it was framed as the amount others were paying. In fact, participants who were given high descriptive ERPs paid a statistically equal amount ($M_{\text{HighDescriptive}}$ = \$25.06, SD = 14.88) to the ERP, ($t(33) = .023$, *n.s.* This indicates that when the frame is descriptive and the ERP is high, the number is predictive of payments. It is important to note that although participants in the descriptive norm

frame conditions paid very close to the ERP amount, the face value of that amount was lower than mean payments in the injunctive norm frame condition. Participants exposed to high injunctive norms actually made significantly higher payments than the ERP. This suggests that when it is costlier to voluntarily meet or exceed ERPs, descriptive frames are more predictive. It is also possible in this case that injunctive norm framed with high ERPs yielded higher payments because participants expected to pay more than $25 for a concert ticket. This would suggest that those exposed to the descriptive norms perceived having a "pass" to pay lower amounts, but those in the injunctive norm frame were sensitized to do what was "right" for the service provider.

Participants in this study reported higher levels of interest and correspondingly higher levels of payment for concert tickets compared to the CLOUDX software prompt used in study 1. It is noted that context and product type should have important implications for voluntary payments. Even though both contexts feature intangible products and anonymous purchase settings, there appears to be important differences in how consumers respond to a PWYW option.

These results indicate that other formats of ERP will have similar effects on voluntary payments. Study 2 provides further insight about what types of information might be best to provide in the purchase context. Findings suggest that when ERP is low, the frame may not be particularly important. However, when the stakes are higher, consumers may be more influenced to follow suit by paying prices similar to the average other. Because descriptive norms are very influential, firms should be cautious when displaying this type of information, as it is out of immediate control. Study 2 results

suggest firms would be well advised to not display what others are paying unless that amount is sufficiently high.

STUDY 3: CONSTRAINING PAYMENTS IN A PWYW CONTEXT

Study 3 was designed to further explore the anchoring effects of low and high ERPs in PWYW purchase contexts. The study was expected to demonstrate continued support for H_1 in that consumers will voluntarily pay more than zero for intangible products that are anonymously purchased. Although setting minimum and maximum payment levels is technically not "true" PWYW, many real world firms such as Bandcamp and Genero.us encourage sellers to set minimum prices and let consumers voluntarily opt to pay more. According to Bandcamp.com, 40% of the time consumers pay more than the minimum price for mp3 track downloads. Sellers may avoid "free" sales in letting consumers determine price by requiring at least a small payment. However, anchoring effects in studies 1 and 2 suggest that this minimum price may in fact drive average prices down. Setting a maximum price may seem counterintuitive to a seller, as it might only prevent unusually high payments[9]; however, it is expected that high "caps" on payments will actually raise average payments through anchoring effects. To the authors' knowledge, there is no business that currently uses a PWYW model that incorporates a maximum payment amount. Exploring the effects of a low minimum and a high maximum will extend anchoring theory in a new context and a new frame. Further,

[9] According to Bandcamp.com, "every day, we see überfans paying $50, $100, $200 for albums priced far lower."

the results are expected to demonstrate that setting maximums may be more profitable for firms compared to either setting minimums or true unconstrained PWYW strategies (H_4).

Method

In late 2013, 76 participants (57.33% male) were recruited from Amazon's Mechanical Turk to answer a short survey answering questions about buying music online and were compensated 25 cents. Mechanical Turk is an online labor market where workers are paid to complete tasks that is often used for consumer research. The study was limited to U.S. based workers. The study utilized a 3-level, one factor (constraint: none, minimum, maximum) between subjects design. Participants were randomly distributed across conditions.

Stimuli

Study 3 tests a third product that is intangible and often purchased in an anonymous online context. In this study, participants are asked to imagine purchasing an mp3 album download. This context was selected due to familiarity. Further, music downloads are one of the most common products to be offered under a PWYW strategy in business practice.

Procedure

Participants were asked to imagine that they were considering purchasing an album by a band they had recently heard about. They further imagined going to the band's website, listening to a few sample tracks and liking what they heard. They were informed that they decided to buy the album download and were then directed to a

payment screen. Participants were randomly assigned to constraint conditions. All conditions were displayed as "Name Your Price" with an open text box. To the right of the open text box, the no constraint condition stated "no minimum," the minimum condition stated "$2 minimum" and the maximum read "$25 maximum" (see Appendix C for payment screen images for all conditions). Responses were also constrained by Qualtrics so that if an answer was outside the constraint for the condition, the participant was given an error message and could correct the payment.

After reporting a voluntary payment amount, participants completed the same thought listing and feelings items described in study 2. They next answered a manipulation check that asked them to recall whether or not they were given a minimum or maximum amount that they could pay. Finally, they were thanked for their participation and received a randomly generated number for compensation purposes.

Results

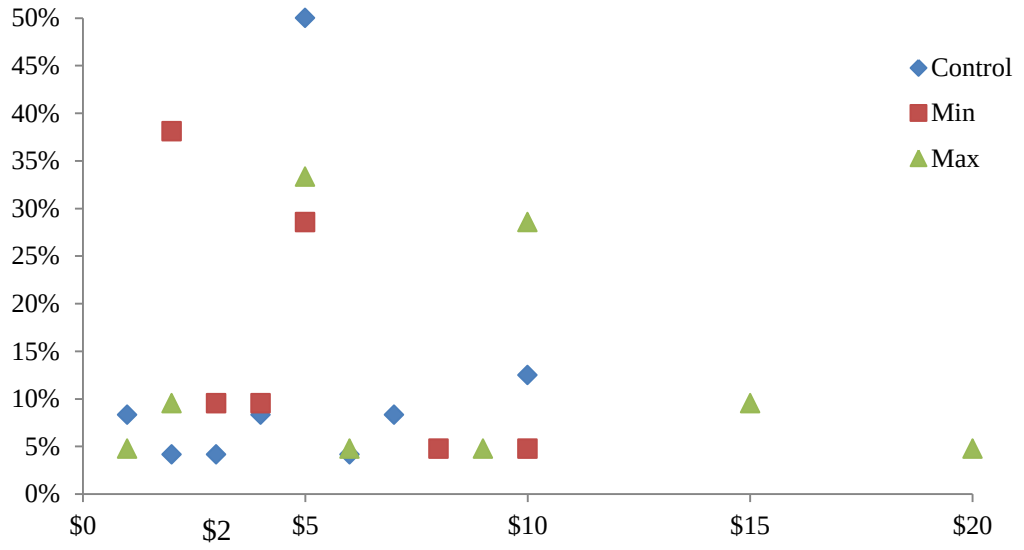
Ten individuals were removed from the analysis because they could not accurately recall whether or not there was a minimum or a maximum payment amount. No one opted to pay zero in the control[10] or maximum conditions, but 38% of the participants in the $2 minimum condition opted to pay exactly $2. No participants paid over $20 in the maximum condition and no participant paid over $10 in either the control or minimum conditions. See figure 4 for distribution of payments across conditions. The high frequency of $2 payments in the minimum condition (38%) vs. other conditions (6% of combined control and maximum conditions) suggests that a minimum price may act

[10] One individual in the control condition paid 1 cent.

more as a default than an anchor which can be a very strong determinant of behavior (Amir et al. 2005).

FIGURE 4

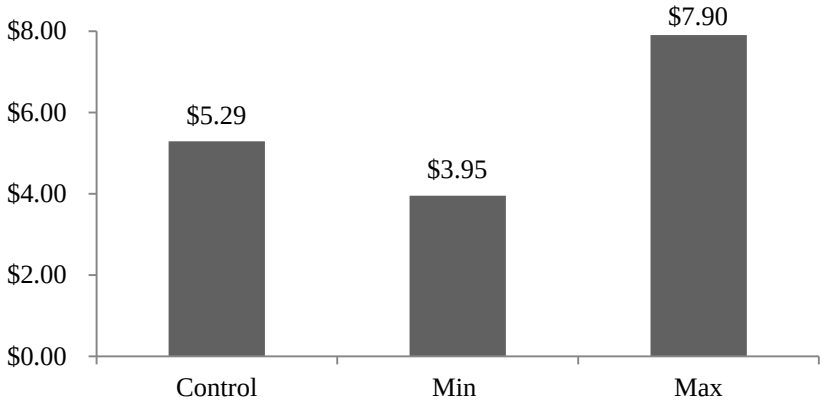
DISTRIBUTION OF PAYMENTS BY CONSTRAINT CONDITION: STUDY 3



The mean payment for the mp3 album download was $5.70 (*SD* = 3.64), which is significantly greater than zero, $t(65) = 12.71$, $p < .001$. Analysis of variance revealed that there were also significant differences in payments across conditions, $F(2,63) = 7.753$, $p = .001$ (see figure 5). Post hoc tests revealed that participants in the maximum condition (M_{max} = $7.90, *SD* = 4.78), paid significantly more than those in either the control ($M_{control}$ = $5.29, *SD* = 2.47) or minimum (M_{min} = $3.95, *SD* = 2.16) conditions, $ps < .003$. Those in the control condition paid on average $1.34 more than those in the minimum condition, but that difference was not significant ($p = .372$).

FIGURE 5

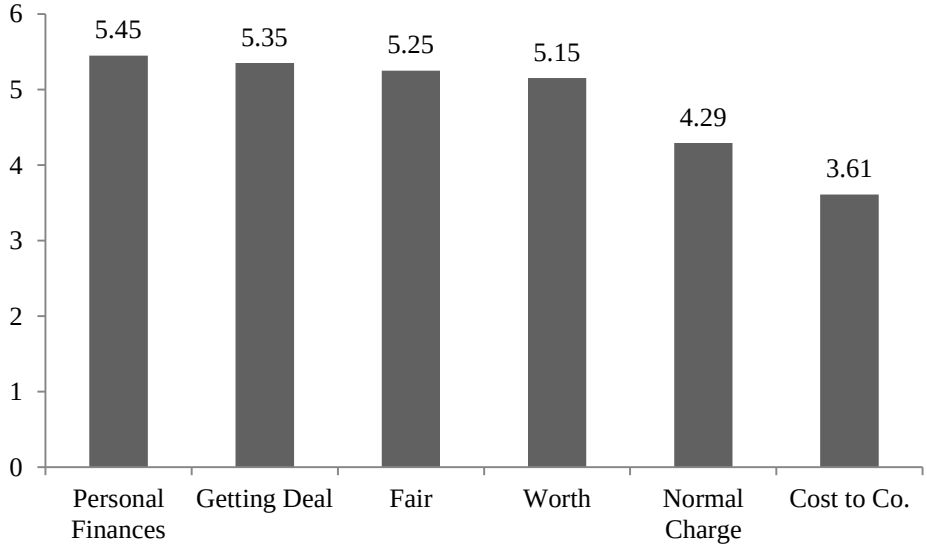
PWYW PAYMENT MEANS BY CONSTRAINT CONDITION: STUDY 3



Qualitative responses indicated that participants had mixed feelings about determining their own payment for the album download. Average valence was slightly positive (M_{all} = 0.339, *SD* = 0.312, scale negative to positive 1). There were no differences between conditions on the importance of factors considered in determining payment, *p*s > .1 (see figure 6).

FIGURE 6

IMPORTANCE OF DECISION MAKING FACTORS: STUDY 3



Once again, post hoc tests revealed participants reported self-focused items ("getting a good deal" and "my own personal finances") as significantly more important in determining payment amounts than firm-focused items ("the cost to the company of providing the music" and "how much the company would normally charge"). However, in this context fairness was not less important than the self-focused factors, see table 6 for means and *p* vales.

TABLE 6

T-VALUES FOR DECISION MAKING FACTOR IMPORTANCE: STUDY 3

			Firm-Focused Factors		
		Pairwise t-test (*p*)	Fair	Normal charge	Cost to Co.
Self-Focused	**Factors**	Personal Finances	.691 (.490)	4.092 (<.001)	6.483 (<.001)
		Worth	.000 (1.00)	3.401 (.001)	2.391 (.017)
		"Good Deal"	.319 (.750)	3.720 (<.001)	6.111 (<.001)

Discussion

To an audience unfamiliar with anchoring effects, it may seem farfetched to suggest capping PWYW payments. Although occasional large payments may be observed when there is no maximum, it may be that the difference can be made up by anchoring effects over many payments. Maximums elicit anchoring effects without the reactance associated with a very high suggested price. Study 3 demonstrates that setting a maximum PWYW limit yields higher payments compared to setting either a minimum or a true PWYW (no constraints) in this context, thus supporting H_4. Although true PWYW and a set minimum strategy yielded equivalent mean payments in this study, it is possible

that true PWYW will outperform set minimums across a larger sample. Given only 42 respondents in the maximum and minimum conditions combined in this study, the maximum condition yielded double the total income compared to the minimum condition. Beyond anchoring effects, it seems that imposing a minimum payment may act as a default. Mean payments made with minimum restrictions are driven down both by anchoring effects and because respondents may see paying the minimum as acceptable or fair. In true PWYW, the minimum is in fact zero, but there is not likely the same perception of acceptability of paying nothing. In fact, 6 out of 8 respondents who paid the minimum specifically mentioned it as a determining factor in their decision making. It is important to note that the control condition did not set a default at zero (again, recall no one in this condition chose to pay $0). It is clear from this research that the manner in which payment information is presented has an effect on payments. Rather than "$0 minimum" using the wording "no minimum" may help avoid setting $0 defaults in true PWYW scenarios.

Study 3 was more subtle in the use of PWYW pricing than earlier studies. Rather than introducing and explaining "Pick Your Price" strategy to participants, this study simply asked them to name their price. This study was more like how consumers would naturally encounter PWYW, stating only "name your price" rather than a paragraph explanation of the pricing strategy used in other studies. Study 3 provides increased confidence that hypothetical payments in these studies accurately predict genuine consumer behavior.

As previously mentioned, product type may have influenced these findings. The qualitative responses indicate that at least some participants cared about how much

money the band received for the album. Responses such as "I'm a fan" and "the band has to make a living" suggest that participants are more motivated to pay for creative content than for a mass produced service such as software (CLOUDX). These effects may not be the same for a "for-profit" business. Additionally, findings from this study may especially applicable for firms expecting to sell many units under PWYW. If the total number of sales is small, the total yield from a maximum price strategy may not be enough to override those occasional very large payments under minimums or true PWYW. However, given more unit sales, it may be that setting maximums might be the most profitable strategy.

Moving forward, a final study in essay 1 tests the influence of self-generated reference prices on voluntary payments. Previous studies herein have demonstrated anchoring effects of numbers that are externally provided by the firm. Participants' inherent thoughts about how much the product is worth and how much the company would normally charge (internal reference prices) may also have influenced payments. Measuring internal reference prices is somewhat challenging because asking participants about expected prices may cause price to have a greater influence on payments than if price was not explicitly reported. Study 4 explores the role reported reference prices have on voluntary payments.

STUDY 4: INTERNAL REFERENCE PRICE EFFECTS ON PWYW PAYMENT AMOUNTS

The final study in essay 1 compares effects attributable to internal vs. external reference prices on PWYW payments. Studies 1-3 have manipulated reference price information given by the firm that is explicitly presented in the purchase context. However, a potentially important predictor of payment amounts in a PWYW setting is the buyer's preexisting internal reference price. The effects of IRPs will be assumed in the control conditions where no ERP information is provided because IRPs are inherently present in all purchase contexts (Mazumdar et al. 2005). However, actively recalling and reporting IRP information may have a biasing effect on payment amounts. Study 4 tests whether reporting IRP information causes payment amounts to change and whether reported IRPs are more or less predictive than ERP information in PWYW settings.

Method and Stimuli

During fall quarter of 2012, 105 participants (mean age = 21.53 and 55.77% male) were undergraduate business students from a large northwestern university who took part in exchange for partial course credit. A randomized 4 condition (Control, IRP only, IRP + low ERP and IRP + high ERP) between subjects design was utilized. As in study 1, CLOUDX was included as the product context.

Procedure

The introduction and basic materials were similar to study 1. Participants were informed an anonymous software company was interested in their reactions to a new

service offering called CLOUDX. They read a short service announcement, were quizzed on their understanding of the service and reported their interest level and attitudes about the product (see Appendices A1&2). Participants assigned to reported internal reference price conditions were then asked to report how much they thought the company might charge for the service per month and how likely they would be to purchase the service at that price. They also reported how much CLOUDX would be worth to them personally on a monthly basis. Participants in a control condition did not answer these questions. These participants are assumed to have similar reference prices implicitly, but were not asked to explicitly report them.

Next, all participants were given the same explanation of PWYW pricing and instructed that the company manufacturing CLOUDX was considering distributing it under this strategy. Everyone was instructed to imagine that they might try the service for a month depending on the price. When checking the price and deciding to purchase the service, participants in conditions with no ERP present saw the following statement: "How much do you think CLOUDX is worth? We are offering you the chance to pay whatever you want." Those in the ERP present conditions read the same phrase with the addition of "Although comparable services are priced between $2 and $4 (low ERP) ($8 and $16; high ERP) per month" prior to the offer of PWYW pricing. The low ERP value was selected to approximate WTP and the high ERP value was nearer to what participants expected the company to charge based on findings from the pretest. These values also represent equivalent magnitude ranges.

All participants reported their PWYW payment amounts. They next completed the same thought listing task as in study 1, which collected the factors considered in price

determination. They then reported the difficulty of selecting a price. Finally, all respondents completed an open-ended response item on their thoughts and feelings about PWYW.

Results

In conditions where internal reference prices were reported (n = 79), participants estimated that CLOUDX would cost \$15.87 (*SD* = 11.01)[11] per month and reported CLOUDX would be worth \$6.88 *(SD* = 7.76)[12]. There were no differences between conditions in estimated charge or reported worth, *p*s > 0.3. There was a significant correlation between estimated charge and reported worth, $r = .527$, p (two tailed) < .01, indicating that the more participants felt CLOUDX was worth, the more they thought the company would charge for it. However, CLOUDX's reported worth is significantly less than the estimated charge, $t(156) = 5.931$, $p < .001$. The average reported voluntary payment for CLOUDX was \$4.71 *(SD* = 6.02)[13]. It should be noted that the reported payments were lower in aggregate than those found in study 1, which may be due to differences in the ERP levels between studies. As a reminder, in study 1, the low ERP value was \$9.99 and in the current study it was \$2-\$4. The high ERP in study 1 was \$24.99 vs. \$8-\$16 in the current study.

[11] Nine participants reported outlier estimated charges per the outlier labeling rule and were Windsorized to the outlier cutoff value (\$39.81).

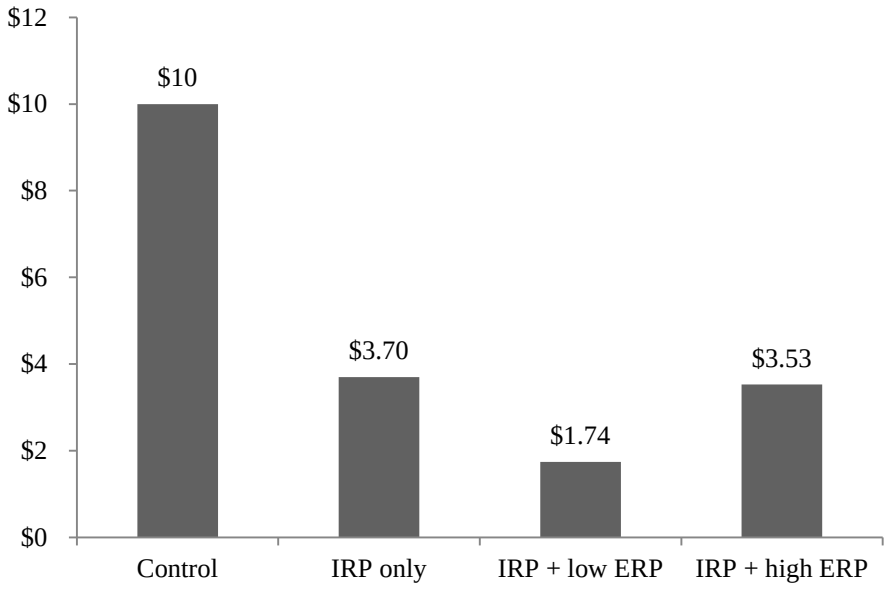
[12] Three participants reported outlier worth values per the outlier labeling rule and were Windsorized to the outlier cutoff value (\$28.17)

[13] Three participants voluntary payment amounts were detected as outliers based on cell means and the outlier labeling rule. These payments were Windsorized to 2 SD above cell means.

Analysis of variance revealed voluntary payments were significantly different across conditions, $F(3,101) = 12.639$, $p < .001$ (see figure 7). A planned Helmert contrast revealed that participants in the control condition paid significantly more ($M_{control}$ = \$10.00, $SD = 8.53$) than those in all other conditions, $p < .001$.

FIGURE 7

PWYW PAYMENT MEANS BY IRP AND ERP CONDITION: STUDY 4



Somewhat surprisingly, the difference between low and high ERP conditions did not reach significance ($p = .211$), although the pattern directionally supports the findings from studies 1-3. This lack of significance despite participants in the high ERP condition paying twice the amount as those in the low ERP condition is most likely due to a small sample size and a high variation in responses. Also of note, multiple regression revealed that internal reference prices were predictive of payment amounts, explaining 15.6% of the variance in payments ($R^2 = .156$, $F(2,76) = 7.500$, $p = .002$). Participants' estimates of both how much a company would charge for CLOUDX ($\beta = .293$, $p = .009$) and how

much CLOUDX was worth ($\beta = .313$, $p = .014$) significantly influenced payment amounts.

Discussion

Study 4 provides strong support for H_5 and H_6, demonstrating that when participants were asked to explicitly report internal reference prices, payments were different compared to when this information was not recalled and reported. Internal reference prices were predictive of payments and anchoring effects of ERPs were observed. It was expected that those who reported were likely to anchor on those self-reported reference prices. However, because participants in the internal reference price conditions paid significantly less than those in control conditions, this suggests a different process of influence. The difference between control and the IRP-only condition is quite interesting. It suggests that the act of thinking about prices may suppress payments in general. It is possible that rather than having an anchoring effect on payments, something about the actual act of effortfully estimating the expected price charged and its perceived worth may have decreased payments. Essay 2 will explore the possibility that dual processing plays an important role in determining voluntary payments.

GENERAL DISCUSSION

In sum, the four studies in essay 1 demonstrate strong support for the feasibility of PWYW for intangible products in anonymous purchase contexts. Across three different types of products (software, concert tickets and mp3 album downloads) positive voluntary payments on average are observed in all conditions. Further, anchoring effects on voluntary payments are observed thus providing support for the hypothesis that higher

numbers in PWYW purchase contexts have a biasing influence on participants' payment amounts. The meaning of provided numbers is also demonstrated to be influential. Firms have the option to provide external reference price information in a variety of formats. Higher external reference prices provided by the firm represent an injunctive norm and were shown to result in higher voluntary payments. Studies 1-4 test injunctive norm frames expressed as normal prices, suggested payments, minimums and maximums, and competitor prices, all of which influenced payments.

Firms can also provide information about descriptive norms to consumers in PWYW settings by providing information about how much others are paying. Results from study 2 indicate that descriptive norms are more influential than injunctive norms when the numeric information is high. In this case, a higher number framed as a descriptive (vs. injunctive) norm caused lower payments because those in the injunctive condition paid above the suggested price. It may even be speculated that when informed that others are behaving in an unfair manner, it allows others to do the same and mitigates feelings of guilt and pressure to "do the right thing." Future research should address how different levels of ERPs related to expected prices can moderate the influence of the reference price on payments.

Study 3 demonstrates the counterintuitive idea of implementing a limit on how much consumers may voluntarily pay. From a business perspective, it may seem odd to hinder people from paying extremely high amounts. However, because of the strong effect of anchoring, capping payments and explicitly displaying that high limit might subtly increase payments overall. Although restricting payments is not "true" PWYW in

an academic sense, it is often done in practice and these findings should prove interesting to practitioners.

Findings from study 4 were somewhat surprising and worthy of further exploration. One might expect that recalling and reporting internal reference price information would have a positive effect on payments. Participants used their own reported internal reference price information in determining payments. It is also possible that the act of thinking about regular prices and how much the service is worth might lead to higher payments out of a sense of justice. However, the opposite effect was observed in study 4. It is possible that the face value of the internal reference prices had a negative impact on payments. Another possibility is that payments are reduced when consumers are more engaged in the decision making process. Additional evidence for this explanation is the repeated pattern observed of higher prices in control conditions compared to those where external reference prices were provided. It may be that numeric information of any sort suppresses PWYW payments. Four studies in essay 2 test these possibilities and explore the process through which cognitive effort influences voluntary payments.

CHAPTER III

ESSAY 2: PLEASE PAY WHAT YOU WANT…QUICKLY!

DUAL PROCESSING AND PAY-WHAT-YOU-WANT CONTEXTS

INTRODUCTION

Essay 2 considers the effects of cognitive processing styles on Pay-What-You-Want (PWYW) payments. PWYW is a pricing strategy where buyers are given control to select any price, from zero to a theoretically infinite amount, which the seller must accept (Kim et al. 2009). This dissertation explores some of the factors that may influence payment decisions in anonymous PWYW contexts. Evidence from past literature and findings from essay 1 indicate that PWYW payments are malleable and predictable in some cases. Essay 1 examined anchoring effects of numeric information presented as different types of norms on PWYW payments. The findings suggested consumers under low cognitive effort can be influenced by numbers present in the PWYW purchase context. Essay 2 specifically tests whether the amount of cognitive effort invested in price determination affects PWYW payments. The manner in which consumers determine voluntary payment amounts may provide insight into basic human motivations. Additionally, there are important practical implications for firms considering implementing PWYW pricing strategies.

Studies 1-3 in essay 1 demonstrated that consumers use heuristics that lead to decision making biases, specifically anchoring and framing effects, when determining PWYW payments. Results from study 4 suggested that recalling and reporting internal reference price (IRP) led to lower payments compared to payments made by those who

did not recall price IRP information. It would not be surprising if, in the absence of externally provided numeric information, consumers anchor on self-reported IRPs when determining how much to pay in PWYW contexts. On the other hand, payment amounts may have been lower because of the increased cognitive effort associated with recalling a price. The studies in essay 2 investigate this possibility.

Essay 2 explores the possibility that consumers pay higher PWYW amounts when deciding quickly on an amount to pay than when investing a greater amount of thought and effort. Such an effect is counterintuitive because acting in one's own self-interest is thought to be an automatic response in most situations (Epley and Caruso 2004; Moore and Loewenstein 2004). Two possibilities might explain why quicker decision-making elicits higher PWYW amounts. First, it is possible that the first impulse may be in fact to act justly (rather than in self-interest) in the face of selfish temptation and that this is an automatic response that leads to higher PWYW amounts. A second alternative is that conserving mental effort by using heuristic based decision making may trump both justice and self-interest concerns. Four experiments reported herein manipulated processing styles to explore effects on payments and to test two additional hypotheses.

Following is a brief review of two streams of research related to essay 2. The basic human motivations of self-interest and justice are introduced and research relevant to PWYW pricing is described. Next, an overview of System 1 and System 2 processing is provided. Three hypotheses related to the effects of basic motivations and cognitive processing styles on PWYW payments are derived.

BACKGROUND

Self-Interest and Justice: Two Fundamental Motivations

Judgments and decisions are driven by two fundamental motivations, self-interest and justice, which can often be in conflict (Lerner and Clayton 2011). Self-interest is defined as pursuing actions that maximize personal utility (Miller 1999). The belief that people will only do what they are paid for or otherwise rewarded for doing is widespread (Lerner and Clayton 2011). The primacy of self-interest as the explanation for judgments, decisions and actions dates back (at least) to the ancient Greek philosophers (Mansbridge 1990). Our tendency to "look out for number one" is a basic assumption underlying the scientific fields of economics and evolutionary psychology, among others. However, many observable actions as well as emotional reactions and judgments are not easily explained by selfish motives. For example, giving to a charity and returning a lost wallet could be seen as violations of self-interest. These irrational behaviors suggest that we may be motivated by concerns other than strict self-interest. Researchers have recently become more interested in explaining the role of justice as a motivator of judgment and decision making.

The justice motivation refers to thoughts about what one "ought" to do that are experienced cognitively or preconsciously (Lerner and Clayton 2011). It includes the desire to ensure that people get what they deserve or what they are entitled to have through their past actions or status. The justice motivation is vastly more complex, less studied and therefore less well understood than the self-interest motivation. Researchers refer to the basic idea of the "ought" imperative under many names other than justice,

such as fairness, deservingness, entitlement, etc. The concepts of reciprocity, altruism, warm glow, etc. are also closely related to the justice motive. Adding more complexity is that what is "just," or what one "ought" to do in any given situation, is subjective and heterogeneous across individuals and contexts.

The potential conflict between justice and self-interest motivations is clear in PWYW contexts where self-interested consumers would be expected to pay little or nothing, whereas concern for justice should encourage the desire to make a fair payment. Neoclassical economics predicts every consumer will pay nothing under PWYW (pure self-interest), but the assumption that people are fundamentally self-interested has been recently contested (Lerner and Clayton 2011). There are many examples of human behavior that violate pure self-interest, such as contributing to public goods and offering fair splits in ultimatum and dictator games.

A firm perceived as fair may deserve higher payments due to the principle of reciprocity. However, reciprocity motivations are normally defined as interpersonal mutual back-scratching (Gouldner 1960) and this may not translate to a consumer-to-firm context. Little is known about the role of reciprocity in a marketing exchange relationship, despite calls for its investigation (Bagozzi 1995). Returning kindnesses is indeed an important behavioral driver and fundamental societal building block, but it may be erroneous to assume that reciprocity norms extend to non-human exchanges such as in the case of for-profit firms. However, some experimental evidence suggests that consumers reciprocate with firms. For example, Morales (2005) found that consumers perceiving higher firm effort in product display presentation rewarded those firms with increased store preference and higher willingness-to-pay (WTP).

Behavioral economic experiments using ultimatum and dictator games provide intriguing examples where rational self-interest assumptions are violated (see Camerer, Loewenstein and Rabin 2003 for review). In the ultimatum game, two subjects are paired, usually anonymously, and one is assigned to be the proposer and the other the responder. The proposer is given money ($10 is a standard allotment) and then instructed to suggest a split to the responder. The responder may choose to accept the proposal and both subjects will receive the cash as allotted by the proposer. Alternately, the responder can choose to reject the proposed distribution and neither participant will receive any cash. Both offering more than a minimal split and rejecting any proposed split are technically irrational, but both behaviors are seen quite frequently in the lab. Dictator games have similar rules, although the ability to reject the offer is taken away from the second player who can only passively receive the determined split. Players often give at least some money to others even under the condition of anonymity and in the absence of possible retaliation. These games are normally played in a person-to-person context, which may amplify these seemingly just allocations. Interestingly, Hoffman, McCabe, Shechat and Smith (1994) found that when ultimatum game players were labeled as buyers and sellers, sellers still gave more money than necessary to buyers. These findings suggest interpersonal tendencies for fairness may transfer to a marketing exchange.

Fair or reciprocating behaviors suggest that consumers may pay more than zero in PWYW out of concern for fairness. PWYW studies have shown that consumers often voluntarily pay positive amounts in both experimental and real purchase contexts (see table 3 for an overview). It is expected even when making a PWYW purchase in an online context free from social pressure that many consumers will pay more than nothing

for a product in PWYW. It would be useful for researchers to investigate what factors and processes are responsible for such positive payments. It seems clear that consumers are not strictly self-interested. All studies in essay 2 are expected to support H_1, which was presented and supported in essay 1. Again, this hypothesis states that:

H_1: Anonymous PWYW payments are greater than zero on average.

Many PWYW researchers have speculated the reason for any PWYW payment above zero may be out of a concern for justice (often referred to as fairness) or the desire to appear fair to others as well as the self (impression/image management). Consumers may have varying levels of concern for fairness, justice, reciprocity and altruism. Marketers can also manipulate fairness concerns through promotional materials presented prior to the payment or communications during the actual exchange. However, consistency in fairness measurements and manipulations in PWYW studies has been lacking and findings regarding its effects have been mixed.

Gneezy et al. (2010; 2012) provide compelling evidence for the fairness motive. When consumers purchased PWYW souvenir photos from an amusement park, they paid significantly more on average when a portion of the payment was donated to charity compared with a traditional PWYW group. Additionally, fewer consumers purchased photos with PWYW pricing when the charity component was present (vs. traditional PWYW) suggesting that fairness motives suppress purchases due to a reluctance to pay an "unfairly" low amount when a charity is involved.

Other studies are less persuasive in demonstrating the influence of fairness on PWYW payments. Jang and Chu (2012) explored fairness motivations as their primary

focus. They manipulated what could be considered to be a fair payment by providing different levels of cost information. They hypothesized that if consumers were concerned with paying a price that was fair to the firm, payments should increase as the perceived cost to the firm increased. Although they found that consumers given higher cost information did pay more than those who were not, the fairness motivation was easily overridden by social cues. When participants were informed others were not paying fair amounts, they were more likely to pay less, conforming to the descriptive norm. Jang and Chu did not address the possibility that payments increased when cost information was higher due to anchoring effects rather than paying more out of fairness.

Kim et al. (2009) found that "fairness positively affects the final price paid" with fairness measured as a single item ("My price paid toward the seller was fair"). Such a measure merely indicates that those paying higher prices reported the prices they paid were fairer. Moreover, this finding was supported only in two of the three product contexts. Even more telling, although paying on average significantly less than self-reported reference prices, consumers believed they had behaved fairly. In sum, these findings indicate that at best fairness only influences payments in some contexts for some consumers and, at worst, fairness is not motivating them to pay a fair price from a firm's perspective.

A concern for justice seems intuitively appealing when trying to understand why consumers make *any* payment in PWYW contexts. A research question proposed in this section is whether justice motivations influence payment amounts. Two studies (studies 1 and 2) in essay 2, each using a different manipulation, tested for fairness effects on PWYW payment amounts. These manipulations were meant to increase the salience of

the fairness. No formal hypothesis is presented due to conflicting predictions outlined above, but the manipulations and results will be reported and discussed subsequently.

Dual Processing: A Tale of Two Systems

Differences in the decision making process may explain conflicting results for effects of fairness on payments in PWYW research. Two systems of cognitive processing are thought to contribute to judgment and decision making (Bargh and Chartrand 1999). The theory of dual processing states that people naturally use a mental energy conservation process aimed at limiting the amount of time spent on cognitive processing in the case of minor decisions (Evans and Frankish 2009; Kahneman 2011). The labels System 1 and System 2 refer to these processing styles. System 1 processing is quick, instinctual, and implicit, whereas System 2 processing is effortful, cognitive, deliberative and "rule based" (Evans 2003; Evans 2008). In most instances of decision-making, people rely on System 1 processing to guide (Kahneman 2011). Only when decisions are difficult and important does the rational and more effortful System 2 take over. It is unlikely that System 2 would be naturally engaged when making a small dollar purchase such as those in many PWYW contexts. Although highly effective, System 1 relies on heuristics, or decision rules, to make quick decisions under uncertainty which can lead to suboptimal choices (Tversky and Kahneman 1974).

Assuming self-interest is the automatic first response in decision-making (Moore and Loewenstein 2004), then a consumer's initial response to a PWYW situation would be to pay nothing. This would suggest that justice motives only emerge when self-interest is actively suppressed. Thus, a reasonable strategy for firms using PWYW would

be to encourage consumers to "stop and think" before deciding how much to pay. The effect of this would be to help the consumer resist the immediate urge to act self-interestedly in favor of acting more justly. Consider Panera Cares, a PWYW bakery which asks consumers to "please leave your fair share," and reminds them that Panera "need(s) your support" and that "you're on your honor." Many similar entreaties from PWYW firms are meant to make consumers stop, think and consider what is just, in the hopes that will results in higher payments, which are more just from the firm's perspective.

Surprisingly, recent research suggests that quicker decisions yield more generous decisions (Lotito, Migheli, and Ortona 2011; Rand et al. 2012). Both ultimatum and dictator game proposers gave significantly fairer splits when they made faster decisions or when they were playing the game for the first time. Thus, a question emerges as to whether a consumer's first instinct is to act fairly. Whether these higher payments are fairer is subjective. However, it is clear that in some cases, consumers making quick decisions do not act out of self-interest. It is expected that PWYW payments made under conditions of less effort yield higher amounts than those that are made under conditions of more effort. Formally:

> H_7: When a consumer engages in less (more) effortful decision making, anonymous PWYW payments will be higher (lower).

Study 1 explicitly tested H_7 by comparing PWYW payments made by those recalling an internal reference price (IRP) information about expected price and about value independently. Pretests and study 4 in essay 1 indicate that participants believed

that the company would charge a price that was significantly higher than what is was worth. If the lower payment amounts observed in study 4 were a result of anchoring on recalled IRPs, then separating the questions between subjects should result in higher payments in the expected price (vs. worth) condition. However, it was expected that, regardless of the type of IRP recalled, payments would decrease when participants exert cognitive effort compared to when they are not asked to report IRPs. Both recall conditions were expected to report equivalent PWYW payments, which were significantly lower than a control group making less effortful payment decisions. In order to confirm that findings were a result of effortful cognitive processing rather than something specific to recalling and reporting IRP, studies 2, 3 and 4 tested for effects of cognitive processing styles using different types of manipulations.

If supported, H_7 does not explain whether less effortful processing leads consumers to act more justly. Rather, it indicates that less cognitive effort leads to higher payments in PWYW. Higher PWYW payments may be an indicator of heuristic-based decision making. Rand and colleagues (2012) suggested that quicker ultimatum distributions are fairer due to a cooperation heuristic rather than increased justice concerns. The authors purport that people forced to make distribution decisions quickly or those unfamiliar with the game rely on heuristics. The response that System 1 suggests is to "do the right thing," because we have been taught that cooperating with others is the right thing to do. However, if one is able or encouraged to stop and think about the rules of the game, System 2 processing may lead individuals to deduce there is little rational support for being fair and this may override System 1's suggestion. A similar explanation might apply to PWYW payments.

Making payment decisions in a PWYW context is likely unfamiliar to most consumers. A lifetime of normal purchases has taught us that money is exchanged when buying a product. In a PWYW context, the easiest, most available choice that comes to mind is to pay an amount that is near the value we expect to pay for the product in a normal purchase context. It is expected that when consumers make PWYW payments using System 1, those payments are subject to a normal price heuristic, thus leading to higher payment amounts. However, when able or encouraged to use System 2, consumers may revert to self-interest motivations, which elicit lower PWYW payments.

If payment differences were the result of a System 1-related reliance on fairness motives, participants should report higher importance of factors related to justice, such as "paying a fair price," in payment determination. Factors related to self-interest, such as "my own personal financial situation," should be reported to be less influential. Also, if fairness explains higher payments made by those processing more superficially, an external reference price (ERP) should be more influential in this condition. This would suggest that payments made by participants using System 1 (vs. 2) would make higher payments when ERPs are high and lower when ERPs are low. This is not expected. A main effect of processing is expected such that System 1 (vs. 2) results in higher payments regardless of ERP level. Higher PWYW payments demonstrated under System 1 are hypothesized to be a result of heuristic-based decision making. Formally,

> H_8: PWYW payments made by consumers using System 1 (vs. 2) processing will be higher regardless of the level of external reference price information.

If supported, H_8 suggests that consumers may not be directly motivated by either self-interest or justice concerns in low consequence decision making in a PWYW context. Prior research indicates that PWYW payments are very low when consequences are high (e.g., León, Noguera, and Tena-Sánchez 2012), most likely because the temptation is so much greater. For most consumers, it is not as painful to pay $9.99 as it would be to pay thousands of dollars for an all-inclusive vacation package, for example. It may be that when the normal price for a product or service is high, consumers are investing more cognitive effort in PWYW payment determination. Switching to System 2 processing may lead to the observed decrease in payments. When System 1 guides decision making, it may be so quick and automatic that it bypasses more deliberative processing. It may be that via product and purchase context, firms have some influence on the type of processing a consumer is likely to engage. This leads to important implications for firms regarding how to structure PWYW purchases as well as the types of products that are appropriate for this strategy.

Four studies in the current essay tested dual processing and fairness vs. self-interest motivations for effects on PWYW payments. First, the effect of cognitive processing style on PWYW payments was explored. Processing style was manipulated using different techniques in each study. The influence of processing style on motivations was subsequently tested. Expected higher payments under low cognitive effort may be a result of reliance on justice motivations. However, it is expected that higher payments are not made out of fairness. Rather, it may be that when making quick decisions, self-interest is bypassed in favor of heuristic-based decision making. A normal price heuristic

leads to increased payments. These studies are described in depth in the following section.

OVERVIEW: STUDIES 1-4

Four studies were designed to test the hypotheses presented in essay 2. As in essay 1, all study contexts involved anonymous payments contexts without any social interaction. Studies were approved by the Committee for the Protection of Human Subjects (CPHS), which serves as the University of Oregon's Institutional Review Board (IRB). The methods, stimuli, procedures and findings are explained in detail below. Table 1 provides an overview of hypotheses tested by study.

TABLE 1

OVERVIEW OF HYPOTHESES TESTED: ESSAY 2

Study	Description	Hypotheses Tested
1	IRP anchoring and Dual Processing	H_1, H_7
2	Cognitive Load	H_1, H_7
3	Elaboration and POV	H_1, H_7
4	ERPs and Time Restraints	H_1, H_7, H_8

STUDY 1: INTERNAL REFERENCE PRICES AND DUAL PROCESSING IN A PWYW CONTEXT

The purpose of study 1 is to extend findings from study 4 in essay 1. Study 4 may suggest that lower PWYW payments are reported when participants recall internal reference price (IRP) information. However, it is not possible to determine from that study if decreased payments resulted from anchoring or the act of IRP recall. Participants in that study reported both how much they thought the company would charge and how

much they perceived the service to be worth. If consumers' payments are anchored on reported IRPs, then IRPs would be predictive of payments in the same manner as ERP information was found to effect PWYW payment amounts in studies 1-3 in essay 1. In the current study, it is hypothesized that the process of effortfully recalling IRP information reduces payment amounts. Effortful recall may make it more likely that participants are using System 2 processing to determine payment amounts. Therefore, it is necessary to test the effects of estimating expected price charged and estimated worth separately. Asking participants to report only one IRP estimates between subjects (rather than reporting both as was done in the previous study) will provide insight into the process by which IRPs influence PWYW payments. Because the two numbers were significantly different within subjects in study 4, recalling estimated charge can act as a self-reported high IRP condition. One the other hand, reporting estimated worth is effectively a self-reported low IRP condition. Additionally, the current study includes a manipulation testing whether increasing the salience of fairness has any effect on PWYW payments. Although no formal hypothesis is put forth, it seems possible that increasing fairness salience may increase PWYW payment amounts.

Method and Stimuli

In 2012, 187 participants (mean age = 21.68 years, 57.5% male) were undergraduate business majors from a large northwestern university participated in study 1. They received partial course credit in exchange for participation. Identical to studies 1 and 4 in essay 1, the current study used the fictitious CLOUDX service (see page 42 for full description). A 2 (fairness: control, salient) x 3 (IRP type: control, high, low) factor

between-subjects design was employed. Student identification numbers were checked to ensure no one had completed a study using this stimulus previously.

Procedure

Prior to reading the CLOUDX service description, all participants were given a writing task designed to appear as a separate study. Half the participants were randomly assigned to a fairness priming task. The task was inspired by a question originally posed by Kahneman, Knetsch and Thaler (1986) in their investigation of price fairness perceptions. Participants were informed that a different university was considering changing the manner in which football tickets were distributed to students. The university was gathering opinions on the perceived fairness of different options. Participants were asked to indicate which of three possible distribution options was the most fair and the least fair and to elaborate by providing several reasons why they felt that was so (see Appendix D1 for complete wording). Participants assigned to the control condition were given a similar task that requested information about the relative time commitments of their scholastic, social and work related responsibilities (see Appendix D2 for details). After completing the priming task, all participants were informed that they were being directed to an ostensibly unrelated study.

Next, all participants received the same new service description of CLOUDX and, as in studies 1 and 4 in essay 1, an attention check quiz as well as interest and attitude measures (see Appendices A1&2). Study 4 essay 1 indicated that estimates of the expected price charged (M_{all} = \$15.87, SD = 11.01) was significantly higher than perceived worth (M_{all} = \$6.88, SD = 7.76), $t(156) = 5.931$, $p < .001$. Therefore, depending

on which question is asked, participants were expected to self-generate a higher or lower IRP. Those assigned to the high IRP condition were asked to report how much they felt the company would charge per month of CLOUDX service. Participants in the low IRP condition were asked to report how much per a month of CLOUDX service was worth (see Appendices D3&4 for exact wording). Again, it was expected based on prior results reported herein that participants tend to think that the company would charge (high IRP condition) significantly more than the service was worth (low IRP condition). A control condition was not asked to generate any IRP information, but completed all other items.

Subsequently, all participants were given the standard PWYW pricing explanation used in essay 1. There were no ERPs given in this study. After reporting payments, participants listed factors that influenced the amount they chose to pay in order of importance. They then indicated whether those factors were negative, neutral or positive (see Appendix D5). Next, participants completed the same measures reported in essay 1 regarding the importance of several presented factors (see Appendix B6). Lastly, they reported how difficult it was to decide how much to pay on a 7-point Likert scale and provided responses to an open-ended item about their thoughts and feelings about PWYW.

Results

An independent samples t-test revealed that participants thought that the company would charge significantly more (M_{charge} = \$14.81, SD = 11.80) [14] than CLOUDX was

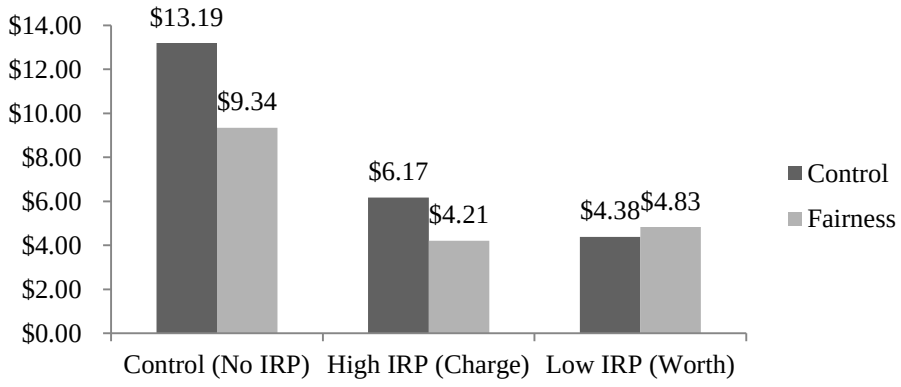
[14] Three participants reported expected price charged as outlier values as indicated by the outlier labeling rule. These values were Windsorized to the cut-off value (\$44.65).

worth (M_{worth} = \$8.64, SD = 6.92) [15], $t(122) = 3.550$, $p = .001$[16]. The manipulation of self-generated low and high internal reference price conditions was therefore successful. Those participants who reported the internal reference price corresponding to expected price charged will henceforth be referred to as the "high IRP" condition. Participants who reported how much CLOUDX would be worth will be referred to as the "low IRP" condition.

Participants reported voluntary payments of \$7.20 (SD = 8.45)[17], which is greater than zero, $t(186) = 11.652$, $p < .001$. See figure 1 for payments across conditions.

FIGURE 1

PWYW PAYMENT MEANS BY IRP CONDITION: STUDY 1



An analysis of variance revealed significant differences in payments across conditions, $F(5,181) = 6.994$, $p < .001$. There was a main effect of IRP condition indicating that people made different payments depending on their IRP level (none, high or low).

[15] Five participants reported worth determined to be outliers by the outlier labeling rule and were Windsorized to the cut-off value (\$23.58).

[16] There were no differences in perceptions of price charged and worth across fairness manipulations (ps > .366) so these conditions were collapsed.

[17] Eight participants reported payments identified as outliers by the labeling rule. These values were Windsorized to the cell means plus two SDs.

However, there was no main effect of fairness salience nor interaction effects, *p*s > .1. Participants who completed the fairness prompt did not report a significantly higher importance of fairness (M_{fair} = 4.50, *SD* = 1.71) than those completing the control prompt ($M_{control}$ = 4.54, *SD* = 1.84) in deciding their payment amounts, *t*(115) = -.129, *p* = .898. This factor was collapsed in subsequent analyses.

Planned contrasts revealed that participants in the control condition who did not report an IRP paid significantly more ($M_{control}$ = $11.61, *SD* = 11.42) compared to those in the high IRP (M_{high} = $5.35, *SD* = 5.19) and the low IRP ($4.58 *SD* = 5.27) conditions, *F*(2,184) = 15.01, *p* < .001. Importantly, there was no significant difference in voluntary payments between participants in the high and low IRP conditions, *p* = .585.

Discussion

It was expected that a fairness manipulation may have a positive impact on payments across IRP conditions. Two possibilities of why this effect was not found are discussed herein. The first is that in this context, increasing the salience of fairness may not encourage people to make higher PWYW payments. The second is that the manipulation of fairness salience was not successful. Although the proxy manipulation check indicated that the fairness prompt did not increase the importance to participants of paying a fair price, it is unclear whether the *salience* of fairness in general was affected by the prompt. In order to test this, study 2 will utilize a new manipulation because the notion that concern for fairness should increase voluntary payments is quite intuitive and often assumed in PWYW settings. It is important to continue exploring this relationship.

The results of study 4 in essay 1 were extended in the current study by explicitly testing whether the cognitively effortful act of generating internal reference prices suppresses voluntary payments or whether participants were simply anchoring on self-generated values. Because participants in the high and low IRP conditions paid equivalent and lower amounts, it is likely that it is not the face value of the self-generated number that matters in determining how much to pay. Rather, the act of generating price information appears to be suppressing payment amounts. This study provides preliminary support for H_7 which suggests that those more cognitively involved in price determination tend to pay lower amounts. It appears that participants who did not effortfully recall and report IRPs may be using System 1 processing and this is increasing payment amounts. When participants use System 2 processing by considering factors such as internal reference price information, payments are suppressed. Study 2 further tests this hypothesis by using a different manipulation of processing style. It is possible that payments are in this study are lowered by a process idiosyncratic to recalling internal reference price information. Study 2 attempts to generalize this finding to not only internal reference price recall, but to a broader processes of System 2 processing.

STUDY 2: COGNITVE LOAD EFFECTS ON PWYW PAYMENT AMOUNTS

Study 2 was designed to find additional support for H7 which predicting that consumers who use less effortful processing tend to make higher PWYW payments. Findings from study 1 demonstrated this pattern but it could be a result specific to recalling IRP information. It is important, therefore, to test other cognitive processing

style manipulations. In study 2, participants were made cognitively busy or left unconstrained in order to test whether those who are using System 1 processing make higher payments, similar to those in the control condition in study 1 in the current essay. Additionally, a different fairness manipulation was included in order to support study 1. The fairness salience manipulation in study 1 did not affect voluntary payment amounts, but this may have been due to the specific manner in which it was tested. This manipulation focused on priming either egotistic or altruistic appeals to test whether fairness appeals encourage more fair (higher) payments (Batson, Duncan, Ackerman, Buckley and Birch 1981). Although intuitively appealing, it was not expected that fairness appeals would increase voluntary payments based on findings from study 1. One final procedural difference was that in this study participants could refrain from buying CLOUDX. This change was meant to remove the influence of those who would not buy the service in a real context.

Method and Stimuli

During fall quarter of 2012, 338 undergraduate business majors from a large northwestern university (mean age = 21.43 years, 60.99% male) completed study 2 in exchange for partial course credit. The study design was a randomized between-subjects 3 (Fairness: egotistic, altruistic, control) x 2 (Cognitive Load: low, high) factor design. An ERP of $9.99 was given in all conditions. Additionally, the design allowed for participants to opt out of the purchase.

Procedure

The instructions, CLOUDX description, attention check quiz and attitude measures were similar to study 1. However, after reading the standard CLOUDX service description, all participants were informed that the price for the basic service was $9.99 per month. This price was selected because it is below what prior participants had expected the company to charge and close to previously reported worth. Participants all completed the same evaluations and attitude measures as previously described. Next, in order to confirm the price was perceived as fair, participants completed a general measure and a three-item 7-point Likert scale regarding price perceptions (Cronbach's $\alpha = .86$; see Appendices E1&2 for full measures). All were thanked for their feedback and informed the study was complete.

Next, participants were directed to what appeared to be a separate study testing memory skills. Cognitive load was manipulated using a letter-string memory task (cf. Gilbert and Hixon 1991). Letters were used rather than numbers to avoid anchoring effects. Participants were instructed they would be shown a random string of letters for 20 seconds and would be asked to recall it approximately five minutes later after completing an unrelated study (see Appendix E3 for complete instructions). Participants in the low cognitive load condition saw a three letter string (DTP) and high load conditions were given an eight letter string (HRNFLRGM). Strings were generated from a random letter generator using only consonants. Those under high load (more difficult memory task) were expected to rely on System 1 processing when determining a payment amount. Participants under a low cognitive load (easier memory task) were expected to

engage in System 2 processing. After a 20-second exposure to the letter string, participants were automatically forwarded to the next study.

Participants were then asked to recall the information they were given earlier regarding CLOUDX. Participants in a control condition were given the same description of PWYW pricing as in previous studies (see Appendix E4). Although participants had been informed that CLOUDX normally was priced at $9.99, this prompt explained that the company was alternatively considering offering it under a "Pick Your Price" strategy. Two different fairness primes were randomly assigned between participants to test the influence of altruistic and egotistic motives (based on Bateson et al. 1981) on PWYW payments. The egotistical fairness appeal condition included a statement reading "Research finds that paying a fair price makes people feel good about themselves" to the control condition script. Alternately, the altruistic fairness appeal condition informed participants "Research finds that paying a fair price allows the company to stay in business so that its services can also be used by others." Subsequently, all participants were asked to imagine the same purchase scenario described in the control condition in study 1 essay 2 and imagined visiting the website to purchase a month of CLOUDX service. Participants then indicated whether they would choose to buy CLOUDX by making a PWYW payment or refrain from purchase (see Appendix E5 for wording). Those opting out were asked a series of questions regarding why they refrained from making the purchase (see Appendix E6 for full questions) and then directed to the letter recall section.

Participants who opted in reported their selected prices as well as identical dependent measures included in study 1 essay 2. They also reported their best guess as to

what others would pay for CLOUDX. After completing the last open-ended response regarding their thoughts and feelings about PWYW, participants were told the study was complete.

After completing the main section of the study, all participants were instructed to report back the letters they were given earlier. To ensure the cognitive load manipulation was successful, all indicated how difficult it was to remember the letters (see Appendix E7 for full questions). Participants were thanked and directed to an unrelated study.

Results

Participants reported moderately positive attitudes regarding CLOUDX (M_{all} = 4.56 on 5 item, 7 pt Likert scale, SD = 1.11, Cronbach's α = .856). The stated price ($9.99) was reported to be neither fair nor unfair (M_{all} = 3.34, 7 pt Likert scale, SD = 1.65) and moderately expensive (M_{all} = 4.44, 7 pt Likert scale, SD = 1.22). Of 338 participants, 148 (43.8%) opted out of buying CLOUDX under PWYW pricing. Those participants who opted out of purchase had significantly less favorable attitudes about CLOUDX (M_{out} = 4.07, SD = 1.11) compared to those who opted to buy CLOUDX (M_{in} = 4.95, SD = 0.96) and provide a voluntary payment, $t(336) = -7.751$, $p < .001$. Further, those opting out of purchase were relatively evenly spread across conditions (see table 2). The percentage of participants opting out v. in was not statistically different based on cognitive load conditions ($\chi^2(1) = 2.356$, $p = .125$) or by fairness manipulation ($\chi^2(2) = 3.436$, $p = .179$).

TABLE 2

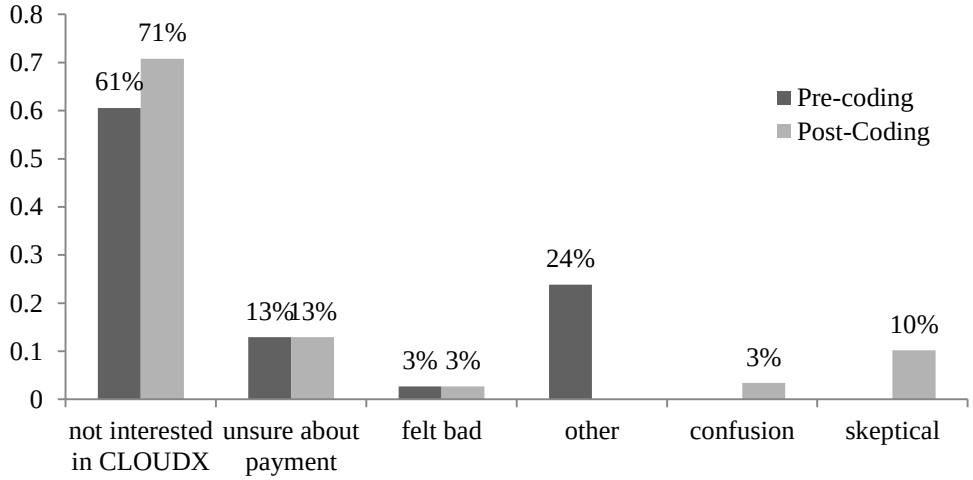
CONDITIONAL FREQUENCIES OF OPTING IN / OUT: STUDY 2

	Overall	Egotistic	Altruistic	Control	High Load (Sys 1)	Low Load (Sys 2)
Opted in	190 (56.2%)	65 (34.2%)	56 (29.5%)	69 (36.3%)	88 (46.3%)	120 (53.7%)
Opted out	148 (43.8%)	48 (32.4%)	57 (38.5%)	43 (29.1%)	81 (54.7%	67 (45.3%)

After opting out of purchase, participants again reported their interest level in CLOUDX service (M_{out_post} = 2.90, *SD* = 1.56). This was compared with their initial interest level ($M_{out\_initial}$ = 3.68, *SD* = 1.63) to test for changes in interest attributable to learning that the payment was voluntary. A paired sample t-test indicated that for those who opted out there was a significant decrease in interest in CLOUDX after learning they would select their own price, $t(147) = 7.00$, $p < .001$. Participants further reported the reason they opted out of purchase[18] (see figure 2).

FIGURE 2

REASONS FOR OPTING OUT: STUDY 2



[18] One participant indicated s/he did not mean to opt out and was removed from analysis concerning differences between those who opted in and those who opted out.

Participants selecting "other" provided open ended responses regarding their reasoning for refraining from purchase. "Post-coding" columns in figure 2 above include these individuals in the counts. Further qualitative analysis of the open ended responses indicated that 15 participants were not interested in the service and 5 indicated they did not understand PWYW or the service. The remaining 15 participants (or 4.44% of the total sample), reported being skeptical of PWYW, with statements such as "seemed too good to be true," "wary, no company would do that," and "felt like a scam." Those opting out reported they guessed others would voluntarily pay $5.57 (*SD* = 5.65) on average for a month of CLOUDX service. Those who opted in estimated others would report similar payment amounts (M_{in} = $5.65, *SD* = 5.11; $t(335) = .129$, $p = .898$.

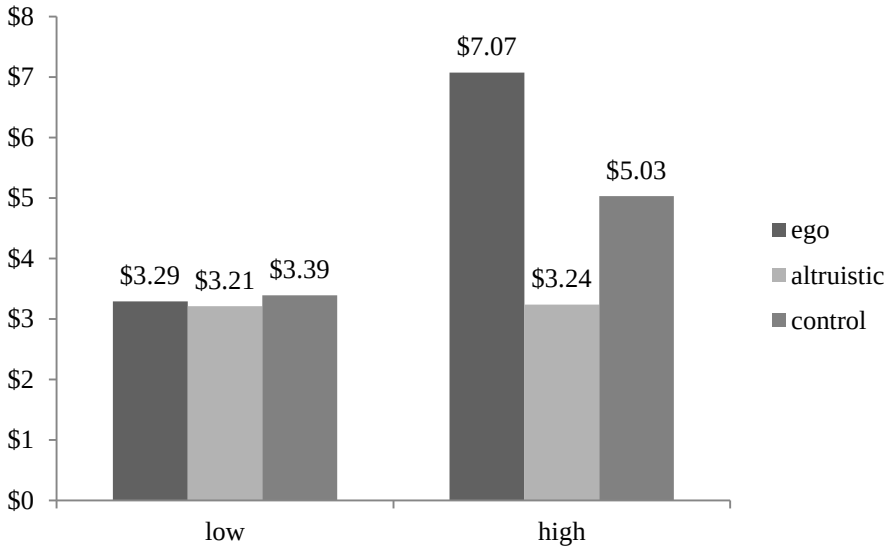
Participants were then asked to report back the letter string given in the cognitive load manipulation. Four participants did not attempt to recall the letter string and were removed from further analysis. All participants in the low cognitive load condition correctly recall the three letter string; however, only 48.75% in the high cognitive load condition were able to correctly recalled the seven letter string ($\chi^2(1) = 45.86$, $p < .001$). Further, participants in the high (vs. low) load condition reported it was more difficult ($M_{high} = 3.66$, *SD* = 0.73; $M_{low} = 1.44$, *SD* = 1.86; $t(142) = -9.01$, $p < .001$) and required more effort ($M_{high} = 4.33$, *SD* = 1.57; $M_{low} = 2.20$, *SD* = 1.27; $t(142) = -8.766$, $p < .001$). Participants in the high (vs. low) load conditions reported trying harder to remember the letters ($M_{high} = 4.85$, *SD* = 1.42; $M_{low} = 3.14$, *SD* = 1.62; $t(142) = -6.75$, $p < .001$). Interestingly, there was no difference in the time spent on the survey overall (M_{high} = 6 minutes 34 seconds, *SD* = 1.80; M_{low} = 6 minutes 32 seconds, *SD* = 1.69; $t(142) = .495$, *p*

= 0.621). This suggests that although participants in the high load were cognitively busier, they did not rush or decide more quickly.

For participants who opted to purchase CLOUDX, the mean payment was $3.86 (*SD* = 3.81)[19]. This is somewhat lower than the mean payment reported in study 1 which may be attributable to the $9.99 reference price provided to all participants in this study (see figure 3). Analysis of variance revealed marginally significant differences in payment amounts between fairness and cognitive load conditions $F(5,183) = 1.89$, $p = .098$. There was a main effect of cognitive load on payments, $F(1,183) = 4.423$, $p = .037$. As expected, participants under high cognitive load paid relatively higher amounts (M_{high} = $4.50, *SD* = 4.99) compared with those under low load (M_{low} = $3.31, *SD* = 2.24).

FIGURE 3

PWYW PAYMENT MEANS BY COGNITIVE LOAD CONDITION: STUDY 2



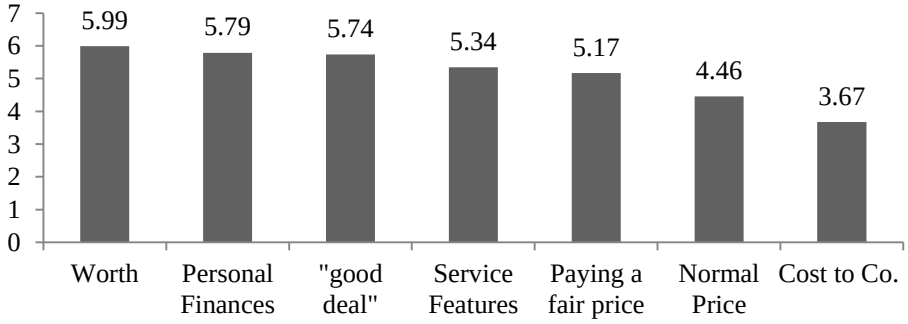
[19] Two participants reported payments identified as outliers by the labeling rule (Hoaglin, Iglewicz and Tukey, 1986). These values were Windsorized to the cell means plus two SDs (Field 2005).

Similar to study 1, there was no significant main effect or interactions related to the fairness manipulation (all *p*s > .26). As in the previous study, it is possible that this manipulation did not effectively manipulate fairness salience. However, the repeated lack of support may also cast doubt on the importance of fairness in PWYW pricing in the context of for-profit companies. Accordingly, study 3 utilizes a trait measure of fairness (Belief in Just World) rather than a fairness salience manipulation. Measuring trait fairness should provide further insight into the role of fairness motivations on PWYW payments. Subsequent analysis in the current study collapses across fairness prime conditions.

When asked to report factors considered when determining how much to pay, participants (n = 189) reported a total of 587 discrete thoughts/factors considered, for an average of approximately 3 reported thoughts per participant. There was no difference in number of factors reported across cognitive load conditions ($t(187) = 1.098$, $p = 274$). In addition to open ended responses, participants rated the importance of seven provided decision making factors, which significantly varied, $F(6,1316) = 59.125$, $p < .001$ (see figure 4).

FIGURE 4

IMPORTANCE OF DECISION MAKING FACTORS: STUDY 2



Although the pattern is slightly different than in previous studies, the key take away remains unchanged. Post hoc analysis again demonstrated that self-focused reasons (such as personal finances and getting a good deal) were reported as significantly more important than concern for justice or the company's well-being. The two factors directly related to the company ("the normal price the company would charge" and "the cost to the company of providing the service") are significantly less important than all other factors, all *p*s < .001. Participants reported that it was a relatively easy to determine how much to pay (M_{all} = 4.89, *SD* = 1.35; no difference across load conditions $t(187) = 1.375$, $p > .1$).

Finally, participants attempted to report back the three or seven character letter string. Only 3 participants did not attempt to recall the letter string and were removed from further analysis. Consistent with the opt out group, participants who reported payments under cognitive load were better able to correctly recall the three character letter string (99%) compared to those under high cognitive load who could correctly recall the seven character letter string (62.5%), $\chi^2(1) = 41.31$, $p < .001$. Those under high load reported the memory task to be more difficult (M_{high}= 3.57, *SD* = 1.90; M_{low}= 1.48, *SD* = .82) and requiring more effort (M_{high}= 4.25, *SD* = 1.39; M_{low}= 2.31, *SD* = 1.31) compared to those in the low load ($t(184) = -9.92$, $p < .001$ and $t(184) = -9.81$, $p < .001$, respectively). Participants in the low load condition reported exerting less effort to remember (M_{low}= 2.93, *SD* = 1.56) compared to those in the high load condition (M_{high}= 4.59, *SD* = 1.44). Again, there were no differences in overall time spent taking the survey (M_{high}= 9 minutes 56 seconds, *SD* = 2.31 and M_{low}= 9 minutes 58 seconds, *SD* = 2.43; $t(186) = -.058$, $p = .953$). Additionally no significant difference in time spent deliberating

over payment (M_{high}= 11.96 seconds, SD = 5.64 and M_{low}= 11.76 seconds, SD = 8.31; $t(157^{20}) = -.177$, $p = .860$) were observed. The fact that those in the high load did not decide faster may suggest that slower decisions do not necessarily indicate System 2 processing is utilized in those cases. Subsequent studies in this dissertation will explore whether fast decisions demonstrate the same pattern as decisions made under high cognitive load.

Discussion

Study 2 provided additional support for H_7. Participants under a high cognitive load chose higher voluntary payments than those under a lower cognitive load. Cognitive load hinders System 2 (deliberate, rational) processing. Results demonstrate that participants using System 1 processing (quick, heuristic) are willing to voluntarily pay more. Combined with results from study 1 where processing was manipulated by recalling internal reference prices, confidence is bolstered that increased processing tends to suppress payments. However, further research is needed to investigate whether these payments are higher because they are more influenced by increased reliance on heuristic decision making (anchoring on the $9.99 external reference prices in this case) or if faster decision makers are more just in their payment determination. The final two studies in this dissertation continue to explore these processes.

Further, the design of study 2 allowed participants to refrain from purchase. It was important to explore whether people who wanted to engage in a PWYW purchase demonstrated similar payment patterns to those observed in previous studies. The same

[20] An apparent glitch in the reporting software caused some participant's time on the payment determination screen to not be recorded. This was spread evenly across conditions.

pattern among those who indicated they would engage in PWYW was observed in this study. Such results offer greater support for the applicability of this research to business strategy. Finally, the discovery that those who were less interested in the service tended to opt out rather than paying a small amount or nothing should be reassuring to firms considering PWYW strategies.

STUDY 3: ELABORATION AND POINT-OF-VIEW EFFECTS ON PWYW PAYMENT AMOUNTS

The purpose of study 3 was to support findings from studies 1 and 2 using an alternate processing manipulation. Study 3 also tested for differences in the type of elaboration the consumer engages in. It is possible that determining PWYW payments by engaging in System 2 processing may cause consumers to be naturally inclined to think about the benefits of acting self-interestedly. This, in turn, would lead to lower reported payments. If consumers are specifically encouraged to elaborate on the benefits of paying fair prices, then System 2 processing may instead lead to higher reported payments. Study 3 manipulated not only the type of cognitive processing (System 1 or System 2) between subjects, but also the point of view (self or firm) and the type of elaboration (justice, self-interest or undirected). Point of view is manipulated due to concerns that prior fairness manipulations (particularly in study 1) may have resulted in a self-focused orientation. Additionally, an individual difference measure of belief in a just world is included in order to test for trait influences on PWYW payments. If higher payments made under System 1 processing are due to a normal price heuristic as hypothesized, neither the nature of the elaboration task nor justice concerns should affect payments. A

main effect of elaboration is expected in that those elaborating will pay less than those who are not.

Method and Stimuli

In spring quarter 2013, 328 undergraduate students (mean age = 21.32, 60.6% male) at a large northwestern university participated in study 3 in exchange for partial course credit. The stimuli (CLOUDX) is identical to studies 1 and 2. The study is a 2 (Point of View: self, firm) x 3 (Elaboration: justice, self-interest, control) factor between subjects design. Two additional conditions, a control group where participants make payments without any manipulation and a group instructed to make payment decisions quickly are also tested. There was no option of opting out of PWYW in this study.

Procedure

Prior to the main study, all participants completed a scale measuring their level of belief in a just world (BJWS; adapted from Rubin and Peplau 1975; see Appendix F1 for full scale). After completing the BJWS, participants completed other unrelated studies for approximately 10 minutes before proceeding to the main section of study 3. Participants progressed through the study in a manner similar to the control condition described in study 1 of essay 2. No ERPs were presented in this study. Participants were given the same CLOUDX information, quiz and attitude measures as used in previous studies. All read the usual description of PWYW pricing and were asked to imagine that they want to buy the service for a month. The payment prompt is identical to previous studies (see page 45). Participants were then randomly assigned to one of eight conditions.

Only those in the control condition proceeded directly to enter their payment amounts. An additional non-elaborating group was instructed to go with their first instinct and report payment amount as quickly as possible (see Appendix F2). Participants in the elaboration conditions were first instructed to take at least two minutes to think about how much they would pay for CLOUDX. During this time the screen was held for 120 seconds and they could not advance. Participants were asked to imagine either they were 1) about to purchase CLOUDX for their own personal use (self POV) or 2) that they were employees at a firm considering releasing CLOUDX under a PWYW strategy (firm POV). These POVs were selected as it is intuitive that those in the self POV might act in more self-interest and those in the firm POV may consider acting more fairly toward the firm. They were further instructed to write down either factors considered when determining payments (undirected condition), reasons for paying a fair amount (justice condition), or reasons for paying little or nothing (self-interest condition; see Appendix F3 for full details).

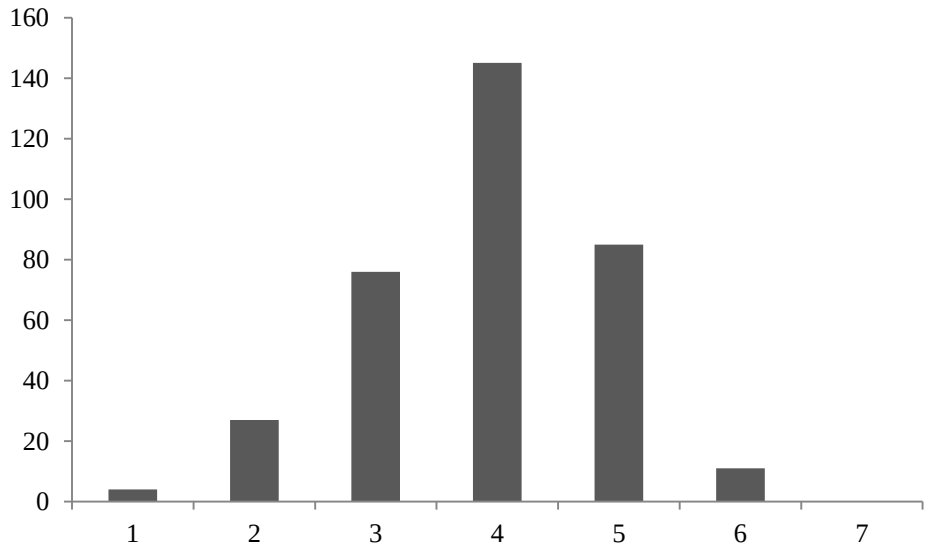
Following the elaboration manipulation, all participants reported payment amounts. The same dependent measures related to the importance of factors in decision making were collected (again, see Appendix B6). In addition, processing items used in study 2 essay 1 were included to ensure the success of the cognitive processing manipulation (see Appendix B7). As in study 1 of essay 2, participants reported liking of and preference for PWYW, as well as open-ended responses regarding their thoughts and feelings regarding PWYW.

Results

Participants first completed the Belief in Just World scale which was purportedly independent from the main study. The seven item scale was reliable (Cronbach's α = .797). Participants reported a somewhat neutral mean score (M = 3.91, SD = .947), indicating that in general participants were not extreme in their beliefs about whether the world is just or not. Scale values ranged from 1 (indicating a complete lack of belief in a just world) to 5.86 (out of 7), see figure 5 for frequencies. Participants then completed an unrelated study lasting approximately 10 minutes before beginning the main study.

FIGURE 5

BELIEF IN A JUST WORLD SCALE DISTRIBUTION: STUDY 3



Participants read the usual introduction of CLOUDX and reported their interest and attitudes. Again, interest level (M_{all} = 4.66 SD = 1.73) and attitudes (M_{all} = 4.76, SD = 1.06, Cronbach's α = .815) were moderately positive. Participants in elaboration

conditions (n = 261) then spent at least 2 minutes responding to their respective prompt. Responses were analyzed to determine whether the participant was elaborating correctly based on condition. Specifically, if the participant mentioned at least one factor that demonstrated the correct POV ("I" vs. from the business' POV) and indicated the correct type of elaboration (pay a fair price vs. pay little or nothing), then she or he was retained. Participants who failed to meet this standard were not retained. In total 31 respondents were not included in the analysis. The 230 remaining participants in the elaboration conditions spent an average of 2 minutes and 24 seconds (*SD* = 29.15) thinking and writing about motivations for voluntary payments.

The mean voluntary payment across conditions was \$6.99, *SD* = 7.81[21]. Multiple regression revealed that belief in a just world was predictive of payment amounts, explaining 1.9% of the variance in payments (R^2 = .019, $F(1,315) = 6.004$, $p = .015$). Participants who had a greater belief in a just world tended to make larger voluntary payments ($\beta = 1.12$, $p = .015$). Accordingly, BJWS score was included as a covariate.

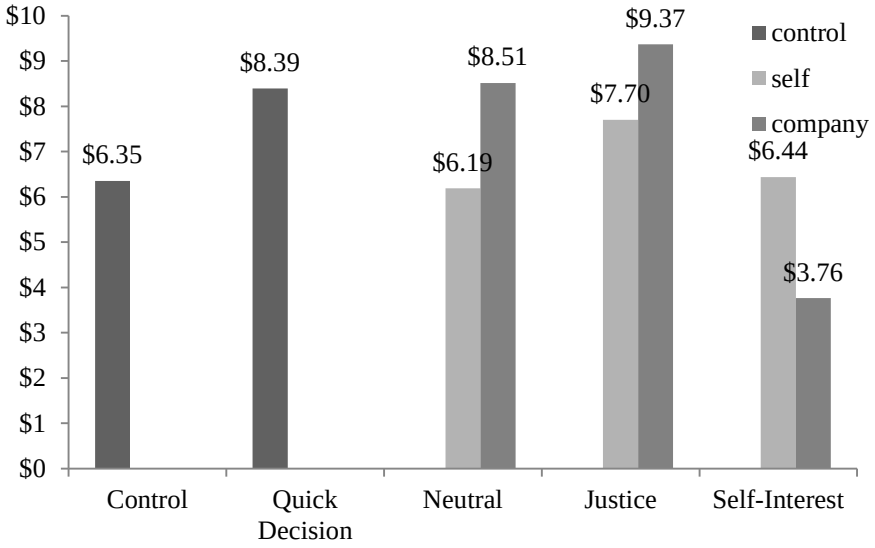
Participants reported a mean payment of \$6.99 (*SD* = 7.81) for one month of CLOUDX, which is significantly above zero, $t(315) = 15.94$, $p < .001$. See figure 6 for conditional means. Payment amounts for the two non-elaboration ($M_{control}$ = \$6.35, *SD* = 8.32 and M_{quick} = \$8.39, *SD* = 11.86) conditions were not significantly different from one another, $t(85) = .931$, $p = .355$.

[21] Eleven participants' reported payment amounts were detected as outliers based on the outlier labeling rule and were adjusted to cell means plus 2 SDs.

FIGURE 6

PWYW PAYMENT MEANS BY

POV AND ELABORATION CONDITION: STUDY 3



Participants in the quick decision condition indicated their payment amounts significantly faster (M_{quick} = 11.02 seconds, *SD* = 5.78) than did those in the control condition ($M_{control}$ = 16.43 seconds, *SD* = 11.16), $t(85) = 2.829$, $p = .006$. This indicates that even though decisions were made more quickly, there may not be differences in processing styles. Additionally, post hoc testing on processing measures used as manipulation checks revealed few significant differences between conditions (see table 3). It does not appear that processing style was significantly different between the control and quick-decision conditions. More importantly, because of the lack of significant differences in processing between elaboration and non-elaborating conditions, we are unable to conclude that those who elaborated did indeed use System 2 processing.

TABLE 3

T-VALUES FOR PROCESSING DIFFERENCES BY CONDITION: STUDY 3

Pairwise t-test (*p*)	**Processing Items**			
	Went with "gut"	Decided quickly	Considered several factors	Thought a lot
Quick v. Control	.704 (.482)	**3.074 (.002)**	.639 (.523)	**-2.170 (.031)**
Control v. Elab	.481 (.631)	**1.881 (.061)**	1.160 (.247)	-1.322 (.187)
Quick v. Elab	-.432 (.666)	**-2.104 (.036)**	.324 (.746)	1.492 (.137)

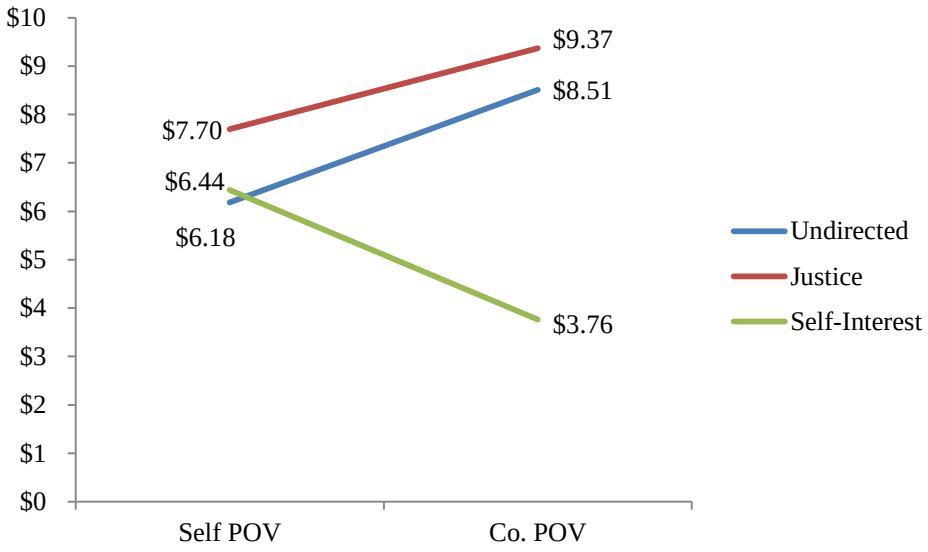
Further, post hoc testing revealed there were no significant differences in payment amounts between either control or quick conditions and all elaboration conditions, all *p*s > .110.

Considering only the six target conditions, analysis of variance revealed a significant difference in payment amounts across conditions $F(5,224) = 3.470$, $p = .005$ and BJW was not significant, $F(1,223) = 1.211$, $p = .272$. There was no main effect of point of view in that those who elaborated from the "self" perspective reported payments ($M_{self} = \$6.77$, $SD = 6.71$) that were no different than those who elaborated from the company's perspective ($M_{company} = \$6.94$, $SD = 6.72$), $F(1,223) = .270$, $p = .604$. There was however a main effect of elaboration type ($F(2,223) = 5.486$, $p = .005$). There was also a significant interaction between POV and elaboration type ($F(2,223) = 3.553$, $p = .030$). Post hoc analysis revealed that there were no differences in elaboration type when the participants were in the self-mindset (*p*s > .8). However, when participants took the perspective of the company and elaborated on self-interest, they paid significantly less

($M_{co\_selfinterest}$ = $3.76, *SD* = 4.25) than did those that elaborated on either justice ($M_{co_justice}$ = $9.37, *SD* = 7.31; *p* = .005) or in an undirected manner ($M_{co_neutral}$ = $8.51, *SD* = 7.24; *p* = .022; see figure 7).

FIGURE 7

INTERACTION OF POV AND ELABORATION ON PWYW PAYMENTS: STUDY 3



The results indicate that elaborating about self-interested motives of making a small PWYW payment only decreased payment amounts when participants took the perspective of the company. It is possible that when in the self-mindset, participants felt self-imposed pressure to do the right thing and make higher payments, whereas the company perspective made it seem acceptable to make lower payments.

Discussion

Findings from this study do not support H_7. It is probable that this was because the elaboration manipulation failed to influence processing styles. In light of results from studies 1 and 2, it may not be surprising that participants instructed to make quicker

decisions did not report larger payments than did those who did not receive any such instructions. It is possible that even though participants in the "quick" conditions did make faster decisions, both groups nevertheless used System 1 processing. This interpretation is in line with the assumption that those in the control conditions were indeed using System 1 processing. However, because those in the elaboration conditions were apparently not using System 2 processing, it is not possible to support the processing hypothesis. Yet, there were significant differences in payment amounts across conditions and it is important to address why this may have been. Because companies often create appeals meant to encourage consumers to voluntarily pay more in PWYW situations, it may be important to consider the mindset induced by the appeal. Asking consumers to think from the company's point of view may have negative effects on payment amounts in some cases.

The point-of-view manipulation was included to test whether previous fairness manipulations in studies 1 and 2 may have unintentionally made salient a self-focused mindset. The results of the current study indicate that inducing a self-focused mindset does not reduce payment amounts. It was expected that regardless of what participants were elaborating on, elaboration would reduce PWYW payment amounts. Although this was not supported in the data, it should be noted that inducing a justice elaboration was also not effective in increasing voluntary payment amounts in this study. This is reminiscent of findings from studies 1 and 2 in essay 2. Interestingly, an individual difference measure of belief in a just world was positively correlated with payment amounts. This indicates that while fairness concerns may indeed influence amount paid,

such concerns represent stable traits that are not easily altered by the firm in a PWYW context.

It is also important to note that participants elaborating on self-interest from a company perspective reported lower payment amounts than all other conditions. It is possible that elaborating on self-interest from the company standpoint relieved self-imposed pressure to pay a higher amount. The combination of company POV and self-interest manipulations may have caused participants to rationalize their lower payments because the company expects customers to act in self-interest. This indicates that self-interest motivations may play a complex role in voluntary payments when such motives are made salient. This relationship should be explored in future research. It may be that those in a self-focused mindset are less influenced by elaborating on self-interested motives. More likely is that the company perspective provided some sort of fairness "pass," where participants thought that companies expected some individuals to pay little or nothing. It is also possible that appealing to fairness motives causes a backlash or reactance effect. In asking consumers to be fair, firms may unintentionally remind consumers how firms can be unfair, manipulative and persuasive in these types of contexts.

These findings also have important implications for businesses. There is no evidence that encouraging consumers to do the right thing will increase voluntary payment amounts. Elaboration did in fact reduce payments, although only when elaboration on self-interest motives from the company POV. No type of elaboration tested in this study resulted in higher reported payments. Firms should be very cautious in

when imploring consumers to be “fair” considering it may have the opposite effect on payments desired.

STUDY 4: TIME CONSTRAINTS AND ERP EFFECTS ON PWYW PAYMENT AMOUNTS

Study 4 was designed to support findings from studies 1 and 2 in the current essay utilizing a final cognitive processing style manipulation. Because study 3 found only partial support for the theory that System 2 processing leads to lower voluntary payment amounts, it is important to continue to explore this relationship. In addition to testing for dual processing effects on payments, study 4 was expected to provide insight into the reason why payments are higher when participants use System 1 processing. By including different ERP levels (similar to studies in essay 1 testing for anchoring effects) as well as time constraints, it is possible to test whether those making quick decisions pay more in order to be fair or simply because it is cognitively easier. As in studies 1 and 2, it was hypothesized that there would be a main effect in that those utilizing System 1 processing would make higher PWYW payments. Anchoring effects are also expected so that regardless of processing type, those presented with higher ERPs will make higher payments. If high payments observed under System 1 (vs. 2) processing stem from increased concern for fairness, payments should remain relatively higher at all ERP levels (not present, low and high). However, an interaction was expected such that when ERP information is high or not present, System 1 (vs. 2) processing will result in higher payments. When ERPs are low (vs. high or not present), no differences were expected in

payment amounts across processing level. If supported, it would indicate that System 1 payments are a result of heuristic-based decision making. When System 1 is engaged and there is no ERP present, one relies on the normal price (how much they would expect to pay) to determine a PWYW payment amount. If, however, an ERP is present, it is cognitively easier to use that number and therefore is more influential in determining PWYW payments. When System 2 is engaged, regardless of ERPs, consumers were expected to demonstrate more selfish tendencies by offering a lower payment amount.

Method and Stimuli

In spring 2014, 277 participants (mean age = 32.4 years, ranging from 19 to 74; 64.26% male) located in the United States were recruited with Amazon Mechanical Turk and completed the study (mean completion time of 6 minutes and 27 seconds) and were compensated 55 cents. The method and stimuli (CLOUDX) in this study are very similar to previously described studies. Study 4 was a 3 (Time: control, pressure, delay) by 3 (ERP level: absent, low, high) factor randomized between subjects design. All ERPs are presented as injunctive norms in the form of suggested prices.

Procedure

All participants were given the standard CLOUDX description, quiz, attitude measures and PWYW pricing information. All were asked to imagine they would like to buy CLOUDX. When participants advanced to the payment screen they were randomly assigned to one of six time and ERP level conditions. Those in control time conditions proceeded to the standard payment screen and entered payment as described in all previous studies herein. Participants in the time pressure (System 1) condition were

instructed they had only 5 seconds to decide how much to pay and to enter their payment as quickly as possible. A timer that counted down from 5 to 0 was displayed. Alternately, those in the time delay (System 2 processing) conditions were told they could not submit payments for 20 seconds (with a timer counting up from 0 to 20) and instructed to use the time to think about how much they wanted to pay. See Appendix G1 for screenshots of all timing conditions. ERP level was manipulated in an identical manner to studies presented in essay 1; participants in the low ERP conditions were given a suggested price of $9.99 and participants in the high ERP level conditions were given $24.99 as a suggested price. After entering payments, all participants completed the standard dependent measures, identical to those described in study 3 essay 2. Three additional manipulation check items were included (see Appendix G2). Participants finally reported basic demographic information and were provided with a random number to submit for compensation. Participants were thanked for their time and effort.

Results

Eleven participants missed an attention check item and were removed from the analysis. Evaluations of CLOUDX (mean interest = 4.48, *SD* = 1.56; mean attitude = 4.81, *SD* = 1.06, Cronbach's $\alpha = .82$) were moderately high and consistent with previous studies. An analysis of variance of time spent on the payment screen before entering an amount across time conditions confirmed that the time manipulation was successful $F(2,262) = 196.14$, $p > .001$. Post hoc analysis revealed that those in control conditions spent significantly more time reporting payments ($M_{control} = 13.09$ seconds, $SD = 7.51$)

than did those under time pressure ($M_{pressure}$ = 7.37 seconds[22], *SD* = 1.31; *t*(260) = 4.79, *p* < .001) and significantly less than those under delay (M_{delay} = 30.24 seconds, *SD* = 11.58; *t*(260)= -14.20, *p* < .001). Additionally, ANOVA across time conditions on a self-report of how rushed they felt in deciding how much to pay revealed significant differences. Those participants in the time pressure conditions felt significantly more rushed ($M_{pressure}$ = 1.64, *SD* = 1.21) than did those in the control ($M_{control}$ = 5.98, *SD* = 1.34; *t*(260) = 20.66, *p* < .001) and delay ($M_{pressure}$ = 5.72, *SD* = 1.61; *t*(260) = 19.38, p < .001). There was no difference between control and delay conditions (*t*(260) = 1.21, *p* = .228). The majority of participants were able to correctly recall whether or not they saw a suggested price, with only four (4.7%) who did not see a suggested price incorrectly reporting that they did and 9 (5.1%) who did see a suggested price reporting that they did not. Further, only 2 (1.1%) of those who correctly reported seeing a suggested price were unable to correctly report the correct price that they were given. All of these individuals were retained in the analysis because it is possible that regardless if the numbers were remembered, they might nevertheless have an unconscious influence on payment amounts.

The mean voluntary payment for one month of CLOUDX service was $7.97 (*SD* = 8.04), ranging from zero to a high payment of $30.00[23]. Approximately 9.5% of participants reported a payment amount of zero dollars[24] for CLOUDX. In conditions

[22] Mean time spent in pressure condition is over the 5 second limit, indicating that some participants were unable to decide in 5 seconds. If a participant took more than 5 seconds to enter a payment, an error message appeared directing them to enter payment immediately.

[23] Fourteen participants reported monthly payments that were outliers according to the labeling rule. These payments were adjusted to the cut-off values (Fields 2005).

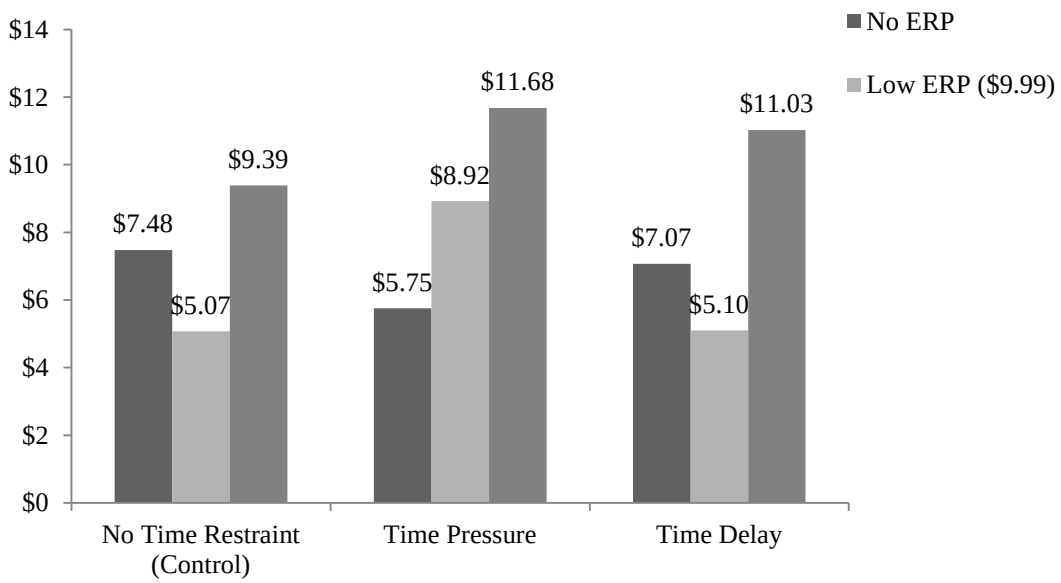
[24] Although above zero, three more participants reported extremely low payments under $1.

with suggested ERPs, 23 participants (12.9%) opted to pay the suggested amount and participants that did so where more likely to be those under time pressure (53%). Analysis of variance revealed voluntary payments were significantly different across time pressure and ERP conditions, $F(8, 254) = 66.61$, $p < .001$ (see figure 8).

There was a significant effect of ERP level, $F(2,262) = 8.337$, $p < .001$. Planned contrasts indicated that those provided with a higher suggested price paid significantly more ($M_{high\_ERP} = \$10.69$, $SD = 8.38$) than did those not given a suggested price ($M_{no\_ERP} = \$6.73$, $SD = 7.36$; $t(260) = 3.34$, $p = .001$) and those given a low suggested price, ($M_{low\_ERP} = \$6.42$, $SD = 7.67$; $t(260) = 3.64$, $p < .001$). This finding supports results reported in essay 1 demonstrating the anchoring effects of ERPs on voluntary payments. There was no difference in payment amounts between those given a low ERP and those who did not receive a suggested price, $t(260) = .263$, $p = .793$.

FIGURE 8

PWYW PAYMENT MEANS BY TIME RESTRAINT AND ERP CONDITION: STUDY 4



There was no main effect of time pressure ($F(2,254) = .830$, $p = .447$), thus indicating that those who determined payments under time pressure ($M_{pressure} = \$8.75$, $SD = 9.96$), did not pay significantly more than did either those who were delayed ($M_{delay} = \$7.81$, $SD = 6.89$) or those placed under no time constraint ($M_{control} = \$7.31$, $SD = 6.77$). Although the pattern of payment amounts was directionally consistent with the hypothesis, H_7 was not supported. No significant interaction was found between ERP conditions and time constraint conditions ($F(4,254) = 1.303$, $p = .269$). Importantly, it does appear that time pressure was related to System 1 processing. Planned contrasts indicated that those under time pressure reported stronger agreement ($M_{pressure} = 5.32$, $SD = 1.23$) with the System 1 processing item "I went with my gut" than did control ($M_{control} = 4.83$, $SD = 1.53$; $t(260) = 2.28$, $p = .023$) and marginally more than delay conditions ($M_{delay} = 4.91$, $SD = 1.55$; $t(260) = 1.91$, $p = .057$). For the System 2 item "I considered several factors," those under time pressure reported less agreement ($M_{pressure} = 4.28$, $SD = 1.74$) than did those in either the control ($M_{control} = 4.87$, $SD = 1.46$; $t(260) = 2.60$, $p = .010$) or the delay condition ($M_{delay} = 5.08$, $SD = 1.33$ $t(260) = 3.49$, $p = .001$). However, there were no significant differences on processing items between control and time delay conditions, ps >.37. This suggests that those in the time delay conditions were not necessarily utilizing System 2 processing.

Discussion

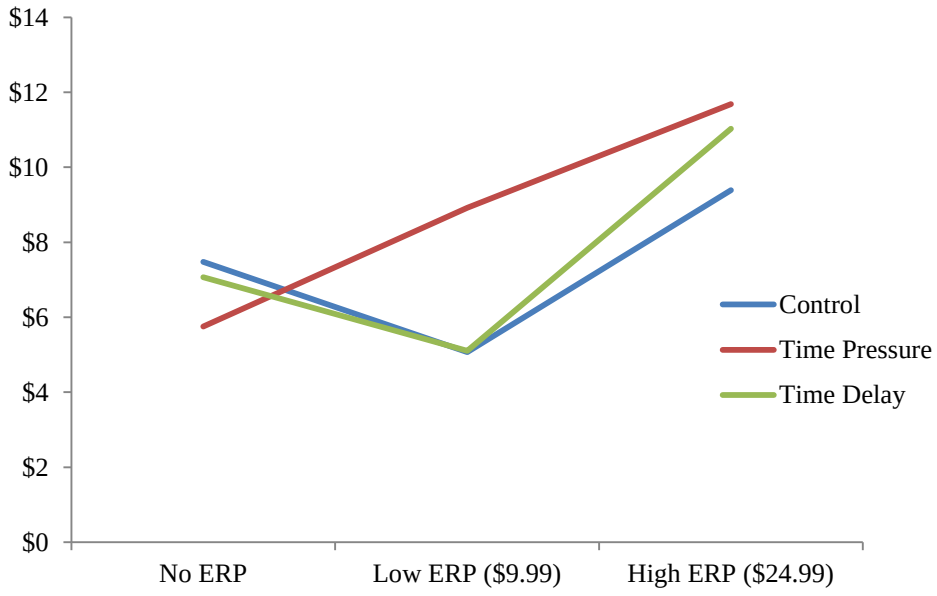
Although statistical support was not found for either H_7 or H_8, the findings are nevertheless interesting. There was an expected main effect of ERP level in that a high suggested price in this case increased payment amounts more than did a low price or no-suggested price information condition. The effect of anchoring on injunctive ("ought to")

norms demonstrated in essay 1 of the current dissertation was again observed. However, findings in essay 1 indicated that a low suggested price may have suppressed payment amount compared to an absence of numeric information and such an effect was not demonstrated in the current study.

It was expected that those using System 1 processing would be more influenced by the provided ERP, demonstrating increased heuristic-based decision making. As shown in figure 9, the pattern of payment amounts across conditions suggests that the predicted pattern was observed.

FIGURE 9

PWYW PAYMENT MEANS BY TIME RESTRAINTS: STUDY 4



Participants in the control conditions with no time constraints behaved similarly to those under delay in that payments with no ERP information were greater than when a low ERP was presented and also greater when a high ERP was presented. Those under time pressure, however, appear to pay higher amounts when the ERP is low. Because

variances are typically quite high in studies of this type (voluntary payments with no upper limit), it is possible that larger cell sizes are required to observe the predicted effect. Another possible reason for the lack of support demonstrated for dual processing effects is that System 2 processing was not effectively induced. It would be beneficial for future research to utilize a context that is more suited for System 2 processing such as an actual purchase decision.

GENERAL DISCUSSION

The findings from studies 1-4 provide partial support for the argument that individuals using System 2 (vs. 1) processing will pay lower amounts. Because the results reported here are mixed, it is clear that more research is necessary to better understand this complex relationship. Study 1 demonstrated that individuals who are induced to think more about the cost and value of a service tended to pay less than those who determined payments without such a cognitive investment. To further support the idea that System 1 processing leads to greater voluntary payments, study 2 results indicate that a higher cognitive load (that encourages more superficial cognitive processing) elicits increased payments. Study 3 tested whether those elaborating on consumer motivations (vs. those who did not) would pay less. Such an effect was not observed. Although not supporting the hypothesis, it is important to point out that elaboration also did not lead to increased payments. A final study attempted to manipulate processing via a time constraint and to test for differences related to heuristic based decision making. Although the pattern of payments indicated higher payments amounts and increased heuristic based decision

making under time pressure, it did not reach significance. It may be that System 2 processing is difficult to induce in hypothetical lab contexts. It appears probable that System 1 processing does lead to higher payments, but it may not be the case that System 2 necessarily reduces payment amounts. Another possibility is that System 2 processing is less likely to be engaged in a hypothetical context.

Although it is tempting to attribute higher payment amounts in PWYW settings to justice motivations, no evidence for this process was found. Only a dispositional trait for fairness included in study 3 was positively related to fairness concerns as a motive for voluntary payments. This may be because consumers do not care about being fair when a product or service is offered by a for-profit business. Perhaps the findings would be different in a donation or non-profit context. This idea is supported by the fact that regardless of amounts paid, participants tended to rate paying a fair amount as moderately important. This means that regardless of paying a lot (could be considered fair to the firm) or a little (might be considered fair to the individual), participants agreed they were at least somewhat concerned with fairness. It just did not motivate them to pay *more*. Fairness is a subjective and idiosyncratic concept. It is possible that when participants report wanting to pay a fair price, it means "fair" to them rather than what a company might think is fair based on the service received.

All studies support the hypothesis that consumers will make voluntary payments greater than zero on average even in anonymous settings. PWYW may be an effective pricing strategy under certain conditions. Based on the findings of these studies, providing external reference prices and encouraging consumers to think deeply about how much they will voluntarily pay must be approached with caution. Because larger,

more expensive products inherently encourage greater cognitive processing, PWYW may be best suited for less expensive products/services. Appealing to fairness motives seems unlikely to result in higher payment amounts. Further, as studies reported here demonstrate decision making biases, these effects may not hold if PWYW strategies become more mainstream. As consumers become more familiar with PWYW purchases and therefore experience less uncertainty, it is less likely that the biases leading to higher payments will be relied on. For this reason, it is important to continue to research this fascinating area in the future.

CHAPTER IV

CONCLUSION

The eight studies presented in essays 1 and 2 address research questions focused on consumer decision making regarding voluntary payments in anonymous Pay-What-You-Want pricing contexts. Findings suggest several important implications for practitioners and provide contributions to extant literature in participative pricing and consumer decision making. As a whole, the dissertation supports the notion that PWYW in the absence of social pressure can be a feasible and successful business strategy under certain conditions. Further, the research herein suggests that voluntary payment amounts in anonymous PWYW demonstrate the influence of heuristic-based decision making.

In sum, this research demonstrates that consumers will voluntarily pay for products and services in anonymous Pay-What-You-Want pricing contexts. All conditions in all studies yielded mean voluntary payments greater than zero across a range of different products in online purchase contexts. Additionally, the presence and meaning of numeric information in the exchange setting were shown to influence voluntary payment amounts. Studies 1-3 in essay 1 demonstrated that higher numerical values influenced voluntary payments through anchoring effects. Study 3 indicated that when numeric information is high (vs. low), descriptive norm information is more predictive of payments than injunctive norm information. The final study in essay 1 indicated that numeric information that is recalled by the consumer also influences voluntary payment amounts. Estimates of the price of the service, as well as its perceived

value, were each predictive of voluntary payment amounts and both also suppressed the influence of externally provided injunctive norm information.

Essay 2 explored the effects of cognitive processing type utilized in the decision making process and found counterintuitive effects on voluntary payments. Although firms tend to make statements in the purchase context meant to encourage fairness in voluntary payment determination, results from essay 2 indicate that payment decisions made with more superficial processing tend to be higher. Studies 1 and 2 suggest that payments made under System 1 processing are higher than those made with more effortful System 2 processing. An elaboration manipulation in study 3 did not fully support the notion that elaboration (System 2 processing) reduces payments. However, it should be noted that those who elaborated on why consumers might pay higher amounts in PWYW contexts did *not* subsequently make higher payments. Similarly, those in study 4 who were delayed in making payments did not make higher payments compared to either those deciding quickly or those who were unconstrained. The hypothesis that consumers rely on a "normal price" heuristic to inform voluntary payments under System 1 processing was supported in essay 2.

Based on the findings from these essays, there are several key "best practices" that emerge for firms considering anonymous PWYW pricing strategies. First, consumers are likely to pay more than zero on average even in the absence of social pressure. This makes PWYW potentially viable for online contexts. Voluntary payments in anonymous PWYW contexts are due to both self-impression management and the normal price heuristic (i.e., people expect to pay something in exchange for a product or service). Because heuristic based decision making is more likely in situations high in uncertainty,

PWYW strategies might be particularly feasible now because the strategy is currently novel and unfamiliar to most consumers. The normal price heuristic stems from consumers' default of payment and the more familiar this sort of pricing becomes, the less likely consumers are to rely on the normal price heuristic. Future research should explore repeated purchases made under PWYW to test whether consumer familiarity with PWYW might lead to lower payments.

The type of product offered under PWYW is also likely to influence the overall financial success of implementing this pricing strategy. Products with low variable cost and potentially high volume are best suited for PWYW from a cost structure standpoint. The risk reducing elements of digital products and services are present in all stimuli tested in this dissertation. Also, as demonstrated by higher percentage payments in low anchor conditions, less expensive items may be particularly well suited for PWYW pricing. When offering expensive products under PWYW, the temptation to act in a selfish manner and the likelihood of engaging in System 2 processing is greatly increased. Further, this research suggests that products such as a concert ticket or an album that are related to creative content are more likely to result in higher payments.. For example, in study 2 participants paid more than the suggested amount in all conditions for concert tickets. This pattern was not observed with CLOUDX, a more traditional product devoid of personal connection. It seems that a personal connection to the band or artist may enhance the salience of self-impression management. Qualitative responses for music-related products often mentioned the band "deserved" to be paid a fair amount and/or that the participant wanted to "support" the band. This was not the case when the firm was selling software. Future research exploring product type

differences as well as the role of brand loyalty/love is necessary to further explore these initial findings.

The findings also provide guidance on PWYW implementation on a tactical level. Should firms provide numeric information in PWYW exchanges? If so, what type of numbers and how large should they be? Further, is it in a firm's best interest to encourage a consumer to make a "fair" payment? The research suggests that providing information about what others are paying influences voluntary payment amounts. Therefore, such information should only be provided if sufficiently high. Also, when providing injunctive norm information (suggested prices, normal prices, etc.) it is important to provide numerical values that are high, but not too high. Injunctive numeric information has diminishing returns when extremely high and also could result in reactance and lower payments. Results from control conditions suggest that providing any numeric information at all may reduce payments by suppressing the heuristic effect associated with a normal price. This suggests that firms should therefore refrain from providing numeric information of any kind. Importantly, there is no evidence that encouraging fairness will result in higher payments, and preliminary evidence reported in this dissertation suggests that it may actually reduce payments. Firms should be very careful about attempting to appeal to fairness motives in PWYW contexts. Lastly, based on the possibility of a novelty effect, PWYW might be most successful when used as a temporary promotion strategy rather than a long term approach.

Beyond practical implications, the research also contributes to our understanding of consumer behavior. The eight studies reported here extend findings on voluntary payments in PWYW pricing contexts to those made in anonymous purchase contexts.

Most existing PWYW research has explored tangible product contexts where exchange occurs in a face-to-face setting. Such settings would therefore be subject to social-impression management. In spite of numerous real-world business examples, previous researchers have suggested that anonymous contexts are not feasible to study PWYW effects (Kim et al. 2009). The data reported herein indicates otherwise. It is important for future research to test these findings in a field setting with consumers. Further, findings suggest that voluntary payments are influenced by numeric and normative information. Supporting prior consumer behavior research, it is demonstrated in this dissertation that consumers are both highly influenced by numeric information and motivated to behave in a manner similar to others. Finally, voluntary payments also seem affected by type of cognitive processing. The dissertation's results suggest that rather than making payments motivated by fairness or self-interest, consumers in PWYW contexts are more likely to rely on heuristic based decision making.

Across two essays, results provide insight into consumer decision making regarding voluntary payments in the novel context of anonymous PWYW pricing. Strong evidence is demonstrated for the influence of heuristic based decision making. Findings in turn support prior literature as well as demonstrate counterintuitive findings. Several new research questions have emerged, encouraging continued study in this area.

APPENDIX A

ESSAY 1 STUDY 1: MATERIALS

A1. CLOUDX Attitude Scale

Please indicate the degree to which you agree or disagree with the following statements:

1. CLOUDX is useful
2. CLOUDX is beneficial
3. CLOUDX is something someone like me would buy.
4. CLOUDX is unnecessary (reverse coded)
5. CLOUDX would make my life easier.

Items presented in a randomized order and measured on a 7 point Likert from strongly disagree to strongly agree (higher numbers indicate more positive attitudes).

A2. Attention Check Quiz

Just to make sure that you understand the CLOUDX service, which of the following is **NOT** something that CLOUDX offers in its monthly contract?

1. 100 GB of storage
2. Sharing capabilities
3. Advanced graphic design software (correct response)
4. Online access

APPENDIX B

ESSAY 1 STUDY 2: MATERIALS

B1. Frequency of Attending a Concert Item

Please indicate how frequently you attend concerts:

1. Have never attended a concert
2. Less than once a year
3. Once a year
4. 2-3 times a year
5. Once a month
6. 2-3 times a month
7. Once a week or more

B2. Purchase Manner Item

If you were to buy a ticket to a concert in advance (NOT the night of the show), how would you most likely buy that ticket?

1. Calling the venue on the phone and speaking with a person
2. Calling the venue on the phone and using an automated system
3. Buying it online through the venue's website or a ticketing website
4. Going to the venue and paying for it in person
5. Other (Please explain)

Items 1-4 presented in a randomized order

B3. Likelihood of Attendance Item

If you heard that one of your very favorite bands or musicians was playing soon in Eugene on a date that you would be able to attend, how likely would you be to attend the concert?

1. Very Unlikely
2. Unlikely
3. Somewhat Unlikely
4. Undecided
5. Somewhat Likely
6. Likely
7. Extremely Likely

B4. Willingness-To-Pay for Concert Tickets Items

1. How much do you expect to pay for a concert ticket to see your *favorite* musician or band?

Please answer in dollars and cents.

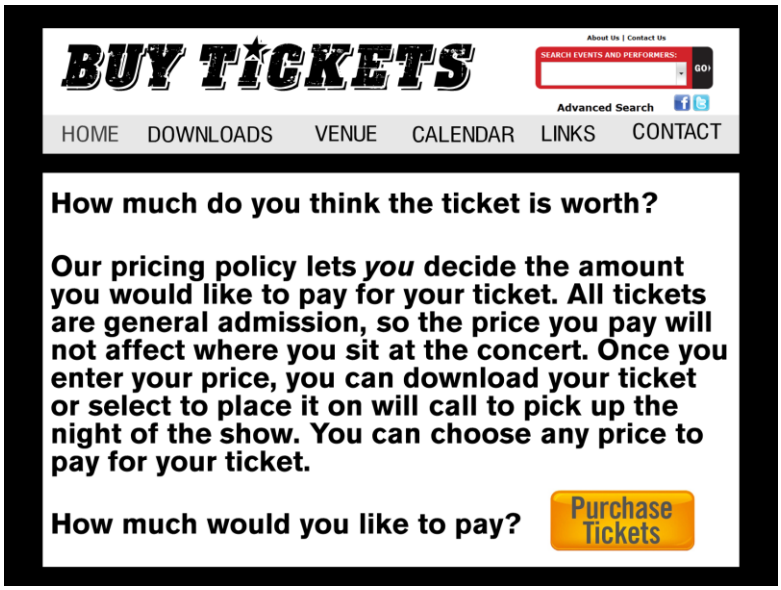
2. How much is the **most** you would pay for a concert ticket to see your favorite band?

Please answer in dollars and cents

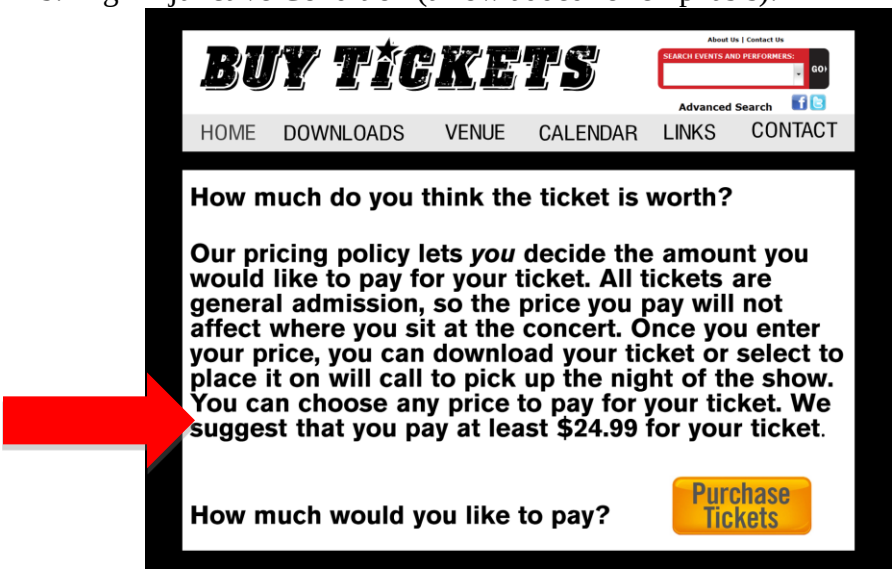
3. How much do you expect to pay for a concert ticket for a popular *nationally known* musician or band?
Please answer in dollars and cents

B5. Screenshots of Payment Page

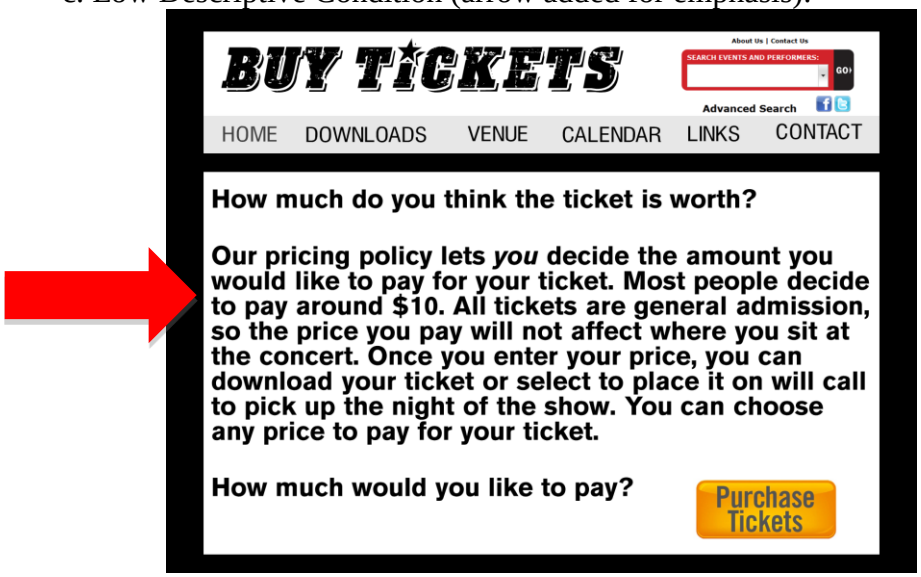
a. Control Condition:



b. High Injunctive Condition (arrow added for emphasis):



c. Low Descriptive Condition (arrow added for emphasis):



B6. Importance of Factors in Price Determination Items

When deciding how much to pay, how important were thoughts regarding:

1. Your own personal financial situation
2. The cost to the venue of putting on the show
3. Giving myself a good deal
4. Paying a "fair" amount
5. How much it was worth to you
6. How much you think the venue might normally charge for a service like this

Items presented in a randomized order and measured on a 7 point Likert from "Not important at all" to "Most important factor in determining price I paid" (higher numbers indicate greater importance).

B7. Cognitive Effort Level Items

Please tell us how accurate the following statements are regarding how you selected the price to pay for the ticket:

1. I just went with my gut feelings (Reverse-coded)
2. I decided very quickly (reverse-coded)
3. I considered several factors when deciding what to pay
4. I thought a lot about how much to pay

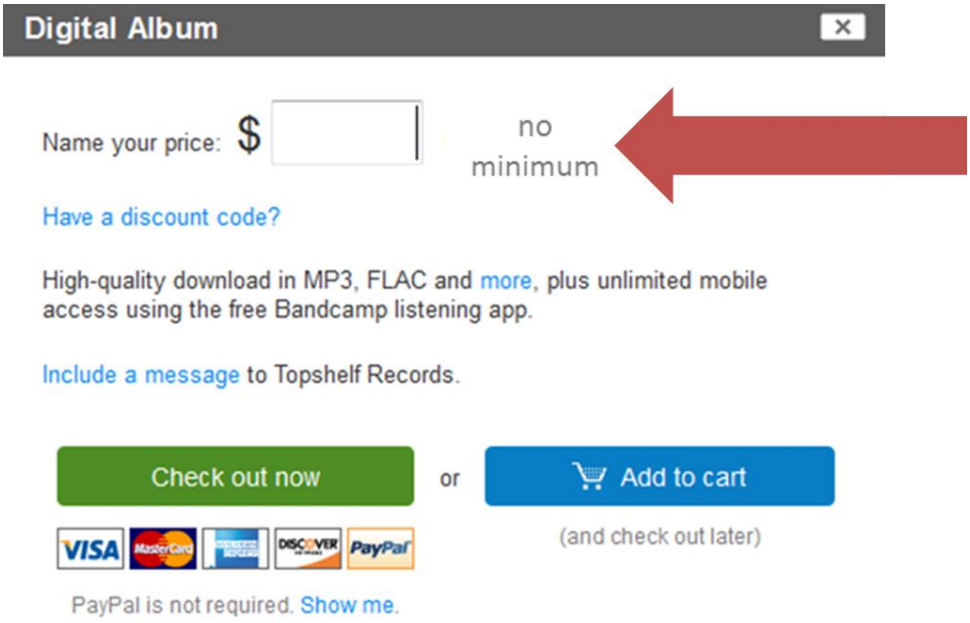
Items presented in a randomized order and measured on a 7 point Likert from "Strongly Disagree" to "Strongly Agree" (higher numbers more effortful processing).

APPENDIX C

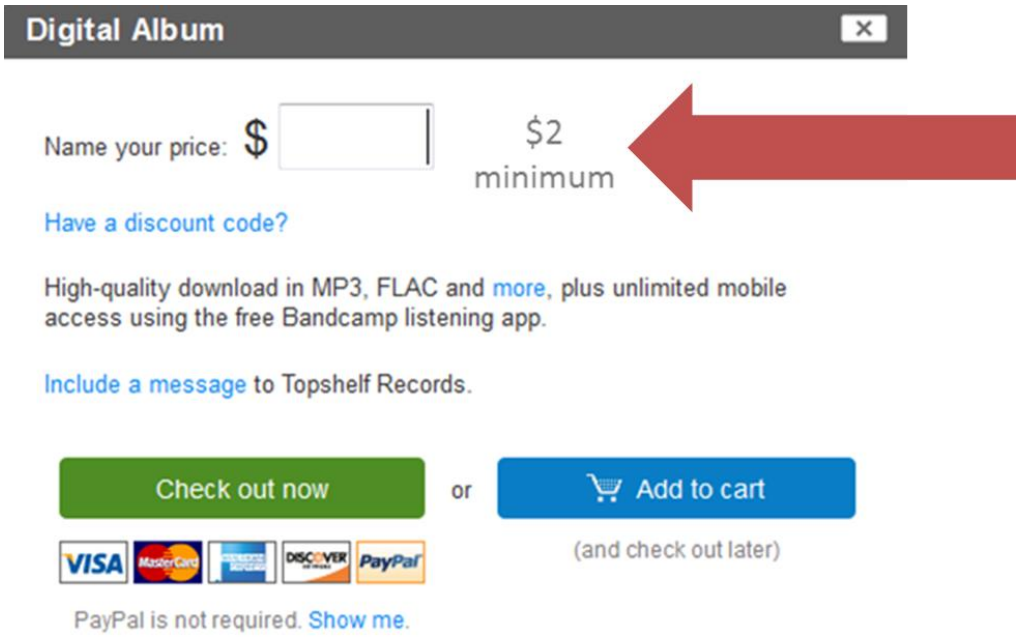
ESSAY 1 STUDY 3: SCREENSHOTS OF PAYMENT PAGE

C1. Screenshots of Payment Page (arrows added here for emphasis)

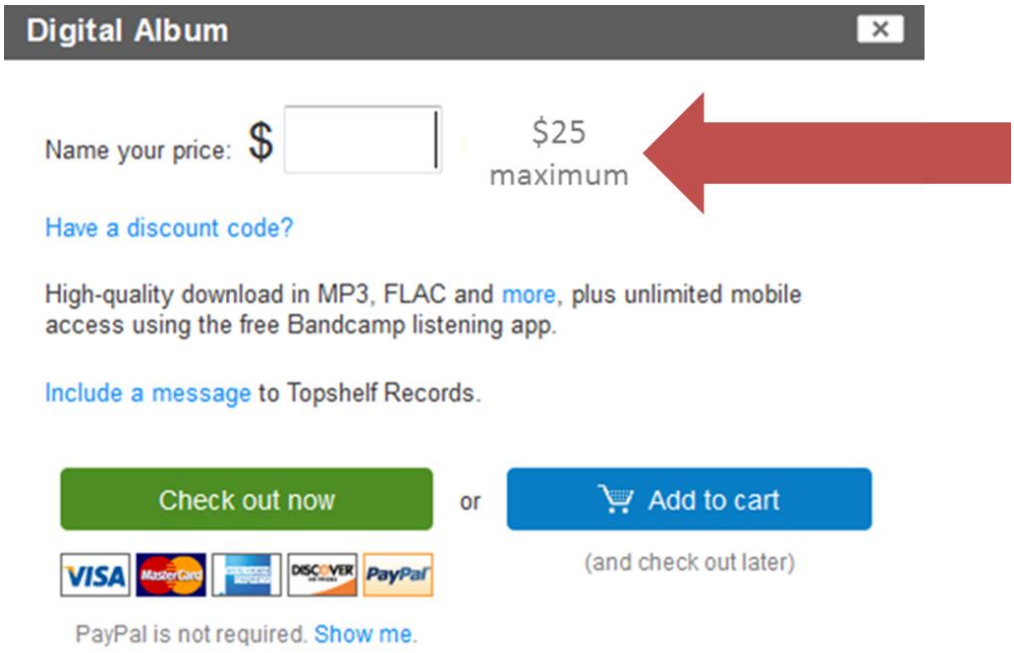
a. Control (No Payment Constraint) Condition



b. Minimum Payment Condition



c. Maximum Payment Condition



APPENDIX D

ESSAY 2 STUDY 1: MATERIALS

D1. Fairness Priming Task

In this short study, we are interested in students' feelings about tickets for sporting events. A (different) University is considering changing the way they distribute football tickets for post-season and championship games. We would like to get your input on three options that are currently under consideration.

We are especially interested in the **FAIRNESS** of each option. Please read and consider the following options:

#1: The University would distribute the tickets in a lottery system where interested students could enter their names to be randomly selected.

#2: The University would distribute the tickets in a first-come-first-served system where interested students could line up at the ticket booth in advance.

#3: The University would distribute the tickets in an auction system, where the highest bidders would buy the tickets.

Please comment on which option is the **most fair** and which is the **least fair** in your opinion. Take your time and provide several reasons **WHY** your choice is the most fair and compare and contrast the choices.

D2. Control Priming Task

In this short study, we are interested in students' feelings about their workload and how they balance social, scholastic and work commitments. A (different) University is considering making scheduling (class time) changes in order to help students better balance their commitments.

We are especially interested in how much time per week you spend on class work and how BUSY or NOT BUSY you feel.

Please think carefully about each of the following:

#1: All the commitments you currently have related to school (such as attending class, homework, studying, etc.) and how much time per week you spend on each.

#2: All the work-related commitments you currently may have and how much time per week you spend on each.

#3. All the extracurricular commitments that you currently have that are non-school and non-work related (such as volunteer, social activities or hobbies) and how much time per week you spend on each.

Please comment briefly on which area takes up the most of your time per week and which takes least of your time.

Take your time here and provide several reasons WHY one area demands more time and compare and contrast the areas

D3. High IRP Condition Manipulation
Based on the above information about CLOUDX, how much do you think the company would charge per month for CLOUDX service?
(Please enter dollars and cents in numerical form)

D4. Low IRP Condition Manipulation
Based on the above information about CLOUDX, how much do you feel that the CLOUDX service IS WORTH to you personally per month?
(Please enter dollars and cents in numerical form)

D5. Factors Considered in Price Determination Item
Please list the thoughts or factors that you feel influenced the price you decided to pay for CLOUDX (in order of importance).
Please list at least two thoughts / factors.
Participants were given 5 open-response boxes:

1. Most important
2. Next important
3. Also considered
4. Also considered
5. Also considered

On the next screen, their responses were presented to them and they were asked:
Now, we'd like you to please report whether each of the thoughts you listed was positive, negative, or neutral.

APPENDIX E

ESSAY 2 STUDY 2: MATERIALS

E1. Price Fairness Item
How do you feel about the price of CLOUDX ($9.99 per month)?
Measured on a 7 point bipolar scale from "a very unfair price" to "a very fair price."
Higher numbers indicate more perceived fairness.

E2. Price Perception Scale
The price of CLOUDX:

1. is very inexpensive, is very expensive
2. hurts a little, hurts a lot
3. is very low cost, is very high cost

Items presented in a randomized order and measured on a 7 point bipolar scale (higher numbers indicate more perceived expense).

E3. Cognitive Load Manipulation
In this study, we are interested in measuring the memory skills and abilities of students at the University of Oregon to compare to other colleges.

In order to do this, you will be shown a randomly generated string of letters for 20 seconds, then you will complete a separate study which should take you less than 5 minutes to complete.

After completing the unrelated study, you will be asked to report the string of letters you were shown (in the same order) and we will be testing for accuracy.

(page break)

In order to ensure our measurement of your memory skill is as accurate as possible, please try your hardest to remember the number.

One method that helps to remember things for short periods of time is to repeat the letters over and over in your head until you are asked to provide it again.

(page break)

Remember, it is important to try to remember the letters as best you can so that we can have an accurate measurement for UO.

You will be asked to report the letters at the completion of the next segment, in approximately 5 minutes.

After you click the forward button, the randomly generated letters will be displayed for 20 seconds then you will be automatically advanced to the next study.

E4. PWYW Description (same as previous studies)

The company that makes CLOUDX is considering offering this service under a Pick Your Price strategy, which allows customers to completely set their own prices for products. This means that you are able to select any price that you are willing to pay and you will receive the service, regardless of the amount that you select, from zero to a theoretically infinite amount.

E5. Opting In / Out

Would You:

1. Opt to buy and continue on to select your price?
2. Decide not to purchase CLOUDX and leave the site?

E6. Opted Out Items

The following questions concern why you decided NOT to pick your price and purchase CLOUDX.

1. Regarding the product, how interested were you in CLOUDX service?
Measured on a 7 point Likert scale ranging from "not interested at all" to "very interested."

2. Which option best describes why you decided to not to pick your price and purchase CLOUDX?

1. I didn't want the product for any price.
2. I was unsure of how much to pay so I just opted not to buy.
3. I was confused.
4. I actually wanted to buy it (pressed the wrong button)
5. I felt bad about paying as little as I wanted to.
6. Other (please fill in).

Items 1-5 were presented in a randomized order with item 6 always presented last. If "other" was selected, participants were asked to fill in an open-ended response.

3. What is your BEST GUESS of the average price that people report paying for CLOUDX when allowed to pick a price?
(Open-ended response)

4. Please report any additional information that you would like to share about CLOUDX and the Pick Your Price payment option.
(Open-ended response)

E7. Manipulation Check Items

1. How difficult was it for you to remember the letters?
Measured on a 7 point Likert scale from “very easy” to “very difficult”

2. How much effort does it take to try to memorize and remember a string of letters of this length?
Measured on a 7 point bipolar scale from “no effort” to “extremely hard”

3. How much effort did YOU PERSONALLY to try to memorize and remember the letters?
Measured on a 7 point bipolar scale from “no effort” to “tired extremely hard”

APPENDIX F

ESSAY 2 STUDY 3: MATERIALS

F1. Belief in a Just World Scale Items

Please indicate the extent to which you agree with the following statements:

1. I feel that people get what they are entitled to have.
2. I feel that a person's efforts are noticed and rewarded.
3. I feel that people earn the rewards and punishments they get.
4. I feel that people who meet with misfortune have brought it on themselves.
5. I feel that people get what they deserve.
6. I feel that rewards and punishments are fairly given.
7. I basically feel that the world is a fair place.

Items are presented in a randomized order and responses are on a 7 pt Likert scale ranging from "strongly disagree" to "strongly agree."

F2. System 1 Condition Instructions

The company would like you to decide how much to pay as quickly as possible.

When you get to the payment screen, please go with your first instinct and enter your payment as fast as you can.

F3. Elaboration Manipulation Detail

Before you decide how much you want to pay for CLOUDX, please take a few minutes to think about and respond to the following question:

[INSERT P.O.V. MANIPUATION HERE]*. [INSERT ELABORATION MANIPULATION HERE].**

You have AT LEAST 2 minutes to think about and write down the reasons or factors. Please take as long as you would like, but you won't be able to advance the page for at least two minutes.

Please write down as many reasons as you can come up with during this time.

[Participants will be given a large essay style text box to respond and the page is held for two minutes. After two minutes, they are able to advance when they have completed their answers.]

*P.O.V. Manipulations:
Self: Please pretend you are about to buy this service.
Firm: Please put yourself in the position of the company. If you worked for CLOUDX,
**Elaboration Manipulation
Undirected: What are some of the things (you, a consumer) would think about in deciding how much to pay?

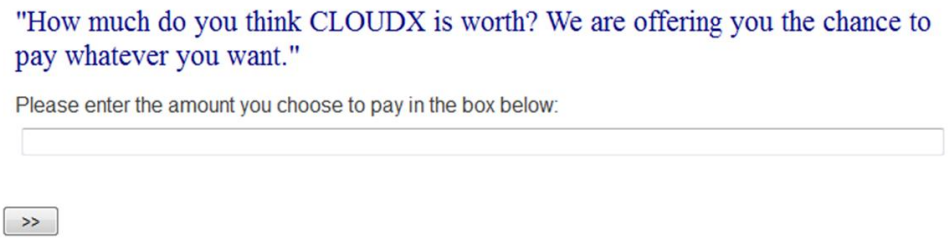
Justice: What are some reasons why (you, a customer) might pay a fair price?
Self-Interest: What are some reasons why (you, a customer) might pay little or nothing?

APPENDIX G

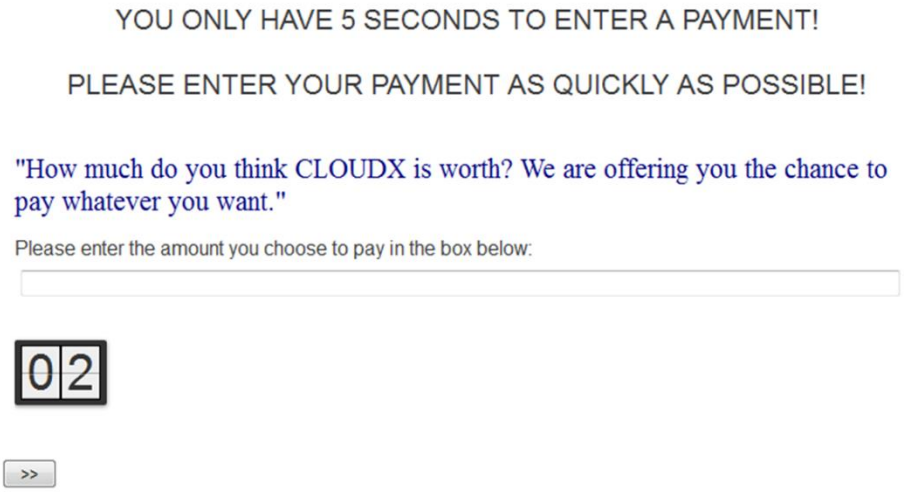
ESSAY 2 STUDY 4: MATERIALS

G1. Screenshots of Payment Page (all images are control ERP level)

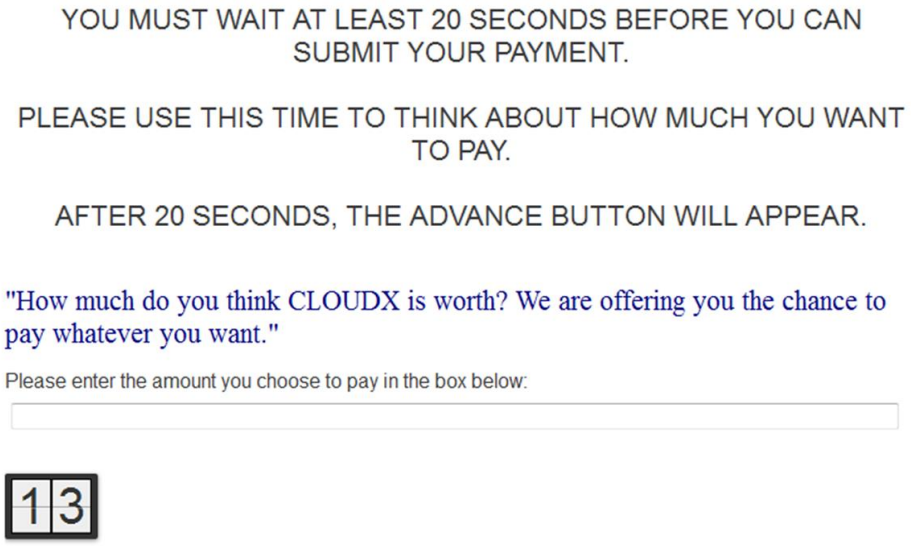
a. Control (No Time Restraint) Condition



b. System 1 Processing (Time Pressure)



c. System 2 Processing (Time Delay)



G2. Manipulation Check Items

1. How rushed did you feel in deciding how much to pay for CLOUDX?
Measured on a 7 pt bipolar scale from “extremely rushed” to “not rushed at all”

2. Did the company give you a suggested amount to pay for CLOUDX? Yes/no
[If yes is selected then] 3. How much did the company suggest you pay? (open-ended response)
4. Have you ever bought a product or service where you were allowed to completely determine your own price in real life? Yes/no
[If yes is selected then] 5. Please tell us about the product. What was it and how much did you pay? How did you feel afterwards? (open-ended response)

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