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Time Cost Consideration

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Time Cost Consideration

CONSUMER RELEVANCE AND CONTRIBUTION STATEMENT

Every aspect of consumption takes time. It takes time to buy products, use services, and have experiences. It takes time to research and consider which options to pick, form attitudes, pursue goals, and share word-of-mouth. Further, how consumers allocate their time has important implications for happiness and well-being. Indeed, as Leclerc, Schmitt, and Dube (1995) note, “For many, time is not just a scarce resource, it is *the* scarce resource” (p. 110).

But while consumers say they value their time (Aaker, Rudd, and Mogilner 2011; Festjens and Janiszewski 2015; Monga, May, and Bagchi 2017), and often wish they had more of it (Etkin, Evangelidis, and Aaker 2015; Sharif, Mogilner, and Hershfield 2021), when it comes to actually making decisions, time implications often seem neglected (Soster, Monga, and Bearden 2010; Whillans et al. 2017; Zauberan et al. 2009). Why?

This research introduces the notion of “time cost consideration,” and proposes a novel conceptualization to better understand it. Integrating existing work with new theorizing, we develop a comprehensive, parsimonious framework suggesting when and why consumers are more or less likely to consider how choices impact their time. By delineating why consumers neglect time costs, and factors that encourage time cost consideration, the framework highlights potentially beneficial interventions for both consumers (i.e., to improve well-being and productivity), and companies (e.g., to more effectively market time-saving products and services). The framework also has broader implications for consumer behavior (e.g., for understanding the impact of technology) and suggests new directions for future research (e.g.,

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3 why other resources may be neglected, or considered, in consumer decisions). Finally, we
4 provide specific propositions that can be tested in future empirical work, paving the way for
5 subsequent investigations of time costs' role in decision making.
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12 **ABSTRACT**

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17 Whether buying products, using services, or having experiences, consumption inevitably
18 involves time. But while time has an important impact on happiness and well-being, and
19 consumers claim to want more of it, time costs are often neglected when decisions are made.
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21 Why? This research introduces the notion of “time cost consideration,” and proposes a novel
22 conceptualization to better understand it. Specifically, we develop a comprehensive,
23
24 parsimonious framework explaining when and why consumers are more or less likely to consider
25 how consumption choices and actions impact their time. First, we delineate how specific features
26 of time, as a resource, may lead time costs to be neglected. Second, we highlight contextual
27 factors (as well as cultural and individual differences) that, by making time costs more salient, or
28 increasing their weight in decision making, should encourage time cost consideration. Overall,
29 this work informs time's role in decision making, sheds light on why consumers appear not to
30 value their time, and highlights potentially beneficial interventions for both consumers (i.e., to
31 encourage spending time in more satisfying ways), and companies (e.g., to more effectively
32 market time-saving products and services).
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51 **Keywords:** time, time-money tradeoffs, consumer well-being, judgment and decision making,
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3 Time is one of our most important resources. Whether buying products, using services, or
4 having experiences, every aspect of consumption takes time. It takes time to collect information,
5 consider options, weigh tradeoffs, make purchases, interact with service providers, return items,
6 and share word of mouth. Further, how consumers spend time influences everything from
7 attitude formation and goal achievement to happiness and well-being (Etkin and Ratner 2013;
8 Liu and Aaker 2008; Ratner and Hamilton 2015; Whillans et al. 2017; Kahneman et al. 2004;
9 Mogilner 2010). Indeed, consumers' biggest regrets often involve what they did (or did not do)
10 with their time (Gilovich and Medvec 1995; Roese and Summerville 2005).
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22 Given time's importance, and that "for many, time is not just a scarce resource, it is *the*
23 scarce resource" (Leclerc, Schmitt, and Dube 1995, p. 110), one might expect time would play a
24 critical role in decision making. When deciding what to buy, for example, or how many options
25 to consider, consumers should consider the implications for their time.
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31 But while consumers say that they value their time (Hershfield, Mogilner, and Barnea
32 2016; Monga, May, and Bagchi 2017; Whillans et al. 2017), and wish they had more of it
33 (DeVoe and Pfeffer 2011; Etkin, Evangelidis, and Aaker 2015; Sharif, Mogilner, and Hershfield
34 2021; Whillans, Weidman, and Dunn 2016), when it comes to actually making decisions, the
35 time implications are often neglected (Soman 2001; Soster, Monga, and Bearden 2010; Whillans
36 et al. 2017; Zauberman et al. 2009). People think about time less than money, for example, and
37 are less interested in saving it (Gino and Mogilner 2014). Similarly, although valuing time is
38 associated with greater happiness and well-being (Hershfield et al. 2016; Whillans et al. 2016),
39 consumers tend to value it less than other resources (Okada and Hoch 2004).
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51 Why might such "time costs" (i.e., the time required to do something) be neglected? And
52 what might make them more likely to be considered?
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3 This research introduces the notion of “time cost consideration,” and proposes a novel
4 conceptualization to better understand it. Integrating existing work with new theorizing, we
5 develop a comprehensive framework suggesting when and why consumers are more or less
6 likely to consider how various consumption choices impact their time. First, we suggest why
7 time costs may be neglected. Specifically, we discuss why time costs may not be salient when
8 making decisions, and, even when they are salient, why they may not be weighted heavily.
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10 Second, we highlight contextual factors (as well as cultural and individual differences) that
11 should encourage time costs to be considered. Finally, we discuss potentially beneficial
12 interventions for both consumers (i.e., to encourage spending time in more satisfying ways), and
13 companies (e.g., to effectively market time-saving products and services), as well as broader
14 implications (e.g., understanding the impact of technology) and directions for future research
15 (e.g., why other resources may be neglected, or considered, in consumer decisions).
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31 This work makes three main contributions. First, while extensive research has considered
32 money’s role in decision making (Cannon, Goldsmith, and Roux 2019; Hamilton et al. 2019),
33 time has received less attention (Leclerc, Schmitt, and Dubé 1995). But money isn’t the only
34 factor involved in consumer decisions, and time serves a key role. By conceptualizing time cost
35 consideration, our perspective highlights that time use is also an output of decision making, and
36 that failing to consider this can lead to less satisfying time expenditures.
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45 Second, although prior research has explored certain aspects of time (e.g., perceived time
46 constraints; Etkin et al. 2015; Monga et al. 2017), and differences between time and money (e.g.,
47 fungibility and mental accounting; Okada and Hoch 2004; Soman 2001), this work has largely
48 been disconnected. By focusing on the notion of time as a resource (Shaddy and Shah 2018) and
49 organizing prior findings based on this perspective, our framework provides a more
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3 comprehensive understanding of why time costs may be neglected, and what may encourage
4 their consideration.¹
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8 Third, our model has clear practical implications. Despite its importance, consumers
9 struggle to spend time well. They spend too much time on certain things (Jhang and Lynch
10 2015), too little on others (Etkin and Memmi 2021; Kahneman et al. 2004; Keinan and Kivetz
11 2008), and often run out of time to accomplish what they intended to do (Fernbach, Kan, and
12 Lynch 2015). Further, feeling time constrained is associated with a host of negative outcomes,
13 including depression (Roxburgh 2004) and insomnia (Strazdins et al. 2011). By deepening
14 insight into time cost consideration, our work sheds light on why consumers may fail to use their
15 time as intended. Along the way, we identify factors that should encourage people to consider
16 time costs, highlighting interventions that consumers and other marketplace actors can use to
17 help people spend time in more satisfying ways.
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33 **TIME AS A RESOURCE**

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38 Consumer research has studied time in various ways. Some work has focused on time
39 perception, examining how consumers perceive the passing of time (Graham 1981) or how
40 scarce time seems (Donnelly et al. 2021; Etkin et al. 2015; Fernbach et al. 2015; Monga et al.
41 2017). Other work has focused on temporal distance, examining intertemporal choice and how
42 the distance between now and the future affects decision making (Frederick, Loewenstein, and
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51 ¹ Note, while the paper often compares time to money, our framework goes beyond time-money tradeoffs to shed
52 light on time cost consideration more generally. While some decisions pit time against money, others are just about
53 time (e.g., deciding between restaurants that take reservations online vs. by phone), and others involve additional
54 resources (e.g., buying in bulk has implications for time and physical space). By delineating features of time that
55 lead time costs to be neglected, and contextual factors that encourage their consideration, the framework informs
56 how time costs are incorporated into a broad range of consumer decisions (requiring tradeoffs with money, and not).
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3 O'Donoghue 2002; LeBoeuf and Shafir 2006; Malkoc and Zauberan 2006; Zauberan and
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5 Lynch 2005; Zauberan et al. 2009). And a third body of work has explored how people
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7 conceptualize time, in relation to the clock (Avnet and Sellier 2011; Tang, Huang, and Su 2023),
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9 the self (Bartels and Urminsky 2011; Mogilner and Aaker 2009), or different time periods (e.g.,
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11 past and future; Bartels and Urminsky 2015; Donnelly, Compiani, and Evers 2022; Kim,
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13 Zauberan, Bettman 2012; Trope, Liberman, and Wakslak 2007).
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17 While these perspectives have provided valuable insights, time is also a resource (Leclerc
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19 et al. 1995; Monga et al. 2017; Okada and Hoch 2004; Shaddy and Shah 2018). By resource, we
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21 mean that time is a form of capital that, like other resources (e.g., money), can be used to acquire
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23 things of value (i.e., things that consumers want or need; Becker 1965; Shaddy and Shah 2018).
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25 This includes not only tangible things (e.g., products and services) but also more intangible ones
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27 (e.g., social connection or self-actualization; Mogilner 2010; Rudd, Catapano, and Aaker 2019).
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31 Importantly, the fact that time can be used to acquire things of value means that *how it is*
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33 *spent has consequences*. Time is finite (Etkin 2019; Etkin et al. 2015; Leclerc et al. 1995; Monga
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35 et al. 2017; Monga and Zor 2019). Consumers only have so much time available to spend (e.g.,
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37 24 hours a day), so spending time on one thing means less time to do others (Etkin and Memmi
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39 2021; Fernbach et al. 2015; Jhang and Lynch 2015). Time spent searching for flights, on hold
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41 with customer service, or answering email, for example, means less time to shop for groceries or
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43 use the gym. And while different consumers may value different things, given whatever a person
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45 values, they can spend time in better and worse ways. Consequently, when consumers don't
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47 consider the time implications of their decisions, or that time is being spent, they may be
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49 forgoing opportunities to receive or achieve things of (greater) value.
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TIME COST CONSIDERATION

Building on the notion of time as a resource, we define “time costs” as the time required to do something.² This includes the time needed to shop at a certain store or use a service, but also the time involved in making these choices to begin with (e.g., doing research or considering alternatives).

Time cost consideration refers to how much consumers consider time costs when evaluating options or making choices. Someone might think about how long it will take to get to a store when deciding to shop there, for example, or how long it will take to do laundry when buying a certain washing machine. Indeed, they may pick a particular store or machine, in part, because it saves them time. Alternatively, consumers may not think about time costs at all, and even if they do, such costs may have little effect on their decisions.³

We suggest that consumers often neglect time costs. They buy new tech products with lots of features, for example, while ignoring the hours it will take to learn how to use them (Thompson, Hamilton, and Rust 2005). They order clothes from multiple online retailers without thinking about how long it will take to return what they don’t want to keep. And they buy stand-up desks, furniture, or other large household items, forgetting how long they will take to

² Analogously, “monetary costs” refer to how much money it costs to do (e.g., buy) something.

³ Note that the concept of time cost consideration (and neglect) is distinct from opportunity cost consideration (and neglect). While both examine what is (or is not) considered during decision making, opportunity cost consideration deals with whether *other* uses of a resource (i.e., what else could be done with the money) come to mind when considering a focal expenditure (Spiller 2011). In contrast, time cost consideration deals with whether time expenditures are considered at all (i.e., how much time will be involved that choice). Further, while (monetary) costs are usually explicit in opportunity cost consideration studies (e.g., a choice between two stereo systems costing \$700 and \$1000, respectively; Frederick et al. 2009 Study 2), we suggest that time costs (e.g., how long it would take to decide which to purchase or complete the transaction) rarely are, and delineate characteristics of time as a resource that, absent explicit provision, contribute to time cost neglect. That said, we suggest that the opportunity cost consideration of time (i.e., alternative uses) is one factor that impacts time cost consideration. (see Table for an overview of the framework).

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3 assemble. Indeed, when we asked people to consider a decision they had made recently, and the
4 factors that drove it, nearly 74% didn't consider time costs at all (compared to less than 33% who
5 didn't consider money). Further, when asked about relative importance, they suggested that time
6 costs were less than half as important as monetary costs (see Web Appendix for details).
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12 To be fair, one could argue that time costs are neglected simply because time isn't that
13 important. Consequently, particularly if other resources (e.g., money) are scarcer, consumers
14 may prioritize them over time. Alternatively, some consumers may value saving money, or
15 seeming thrifty, and thus willing to spend time to achieve those goals (Lastovicka et al. 1999).
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22 But while these aspects are certainly true for some people, some of the time, we suggest
23 there is a much more fundamental reason that time costs are neglected. Specifically, we propose
24 that characteristics of time, as a resource, discourage consideration. Compared to a resource like
25 money, for example, time is relatively intangible (e.g., it cannot easily be seen or touched) and is
26 more difficult to budget for (e.g., because it's harder to forecast and track time expenditures).
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33 We suggest that these, and other inherent characteristics of time, lead time costs to be
34 neglected because they reduce time costs' (1) salience (i.e., the degree to which it is thought
35 about) and/or (2) weighting (i.e., how important it is) in decision making. When considering
36 what car to buy, for example, factors like environmental impact may be more or less salient. But
37 while salient information tends to be more impactful (Tybout and Yalch 1980; Fazio, Powell,
38 and Williams 1989), salience is not always enough, and even salient information may not be
39 weighted heavily. A car's environmental impact may be quite salient (e.g., detailed on a window
40 sticker), for example, but still have little to no impact on what consumers buy (e.g., they choose
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Next, we lay out our conceptual framework regarding time cost consideration (see Table 1). First, we outline inherent characteristics of time, as a resource, that we suggest lead to time cost neglect (either because they make time costs less salient, or because they encourage consumers to weigh them less heavily).

TABLE 1: CONCEPTUAL FRAMEWORK

	Salience of Time Costs	Weighting of Time Costs
Inherent Characteristics of Time	<ul style="list-style-type: none"> • Intangible • Passively spent • Naturally replenished • Informally transacted 	<ul style="list-style-type: none"> • Ambiguous value • Endowed, not earned • Hard to budget for • Limited consequences for overspending • Perceived future availability
Contextual Factors	<ul style="list-style-type: none"> • Explicit provision • Related cues 	<ul style="list-style-type: none"> • Explicit prompting • Specialness • Acquisition effort • Evaluation mode • Cost timing • Relative magnitude
	<ul style="list-style-type: none"> • Perceived time constraints • Alternative time uses • Trading time for money 	

Second, certain contextual factors (as well as individual and cultural differences) can shift these outcomes, so we highlight key factors (e.g., cues that make alternative uses salient) that should make time costs more likely to be considered. Third, we show how the framework highlights potentially beneficial interventions for both consumers (i.e., to encourage spending time in more satisfying ways), and companies and organizations (e.g., to more effectively market

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3 time-saving products and services). Finally, we discuss implications of the framework for
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5 consumer well-being, new technologies, and resources other than time.⁴
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10 INHERENT CHARACTERISTICS IMPACTING SALIENCE

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14 We suggest that time costs are often neglected because they are not very salient (i.e.,
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16 thought about) when decisions are being made. Further, we suggest that time, as a resource, has
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18 inherent characteristics that make it less salient. Specifically, time tends to be (1) intangible, (2)
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20 passively spent, (3) naturally replenished, and (4) informally transacted, all of which should
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22 decrease its salience. Through decreasing salience, these factors should also lead time costs to be
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24 weighted less, but we discuss them under salience because they should affect weighting
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26 primarily through salience.
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33 **P1:** Inherent characteristics of time (i.e., it is intangible, passively spent, naturally
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35 replenished, and informally transacted) should make time costs less salient.⁵
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44 ⁴ Note, we do not mean to suggest that time costs should *always* be focal, or that they should be considered *more*
45 than other resources (e.g., money). In some situations (e.g., financial constraint), there may be good reasons to
46 weight time costs less than other aspects. But even if time costs are less important than some things, they may be
47 more important than others. And if time costs aren't considered (e.g., because they aren't salient), they won't be
48 weighed at all. Overall, we suggest that greater consideration of how decisions impact their time will improve
49 consumer well-being.

50 In addition, while greater time cost consideration may often be beneficial, it may sometimes have
51 downsides. Time stress is associated with worse health outcomes (Malkoc and Tonietto 2019), for example, and
52 while maximizing tendencies can encourage better results, they can also reduce satisfaction (Iyengar, Wells, and
53 Schwartz 2006). Along these lines, becoming overly preoccupied with time costs, efficiency, and spending time may
54 have negative effects. But particularly among the many consumers who feel pressed for time, some greater
55 consideration would likely be beneficial. Overall, by better understanding the drivers of time cost consideration,
56 consumers can make more informed decisions and spend their time in more valuable ways.

57 ⁵ See Web Appendix for complete list of propositions.
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Time is Intangible

Tangibility refers to the extent to which something can be physically sensed (i.e., touched or seen; Laroche, Bergeron, and Goutaland 2001). Someone with \$100 in cash can touch and count the bills, for example, and even non-cash forms of money (e.g., credit cards) can be physically touched and seen. Time, in contrast, is less tangible (Bardhi and Eckhardt 2017). It can't be touched, and while one can watch its passing (e.g., on a watch), it can't be physically counted (e.g., moved like a \$20 bill can). Someone with 2 free hours, for example, cannot physically perceive or handle that time.

We suggest that time's intangibility, in turn, should make time costs less salient. Research on spending money, for example, suggests that the tangibility of a resource impacts awareness of expenditures (Raghubir and Srivastava 2008; Soman 2001). Payment methods that can be physically touched and seen (e.g., cash) are more salient than methods that lack physical presence (e.g., credit cards; Shah et al. 2015). Along these lines, because time is less tangible, expenditures should be harder to notice. As a result, time's intangibility should make time costs less salient (and thus reduce their impact on decision making).

P1a: Time's intangibility should make time costs less salient.⁶

Time is Spent Passively

Another reason we suggest time costs are less salient is because time is spent more

⁶ Importantly, as we discuss later, contextual factors that influence time costs' salience (e.g., explicit provision or related cues) should encourage time cost consideration.

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3 passively. Resources vary in how actively (i.e., consciously, or deliberately) they are spent.
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5 Money, for example, is usually spent actively, by pulling out a credit card, tapping a phone, or
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7 taking some other action. Time, however, is often spent passively (i.e., without active
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9 intervention). Although consumers can choose *how* to spend their time, time elapses regardless
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11 of whether one makes active choices or not. Consumers may only mean to spend a couple
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13 minutes on email or social media, for example, only to find an hour has gone by.
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17 Passive spending, in turn, should make time costs less salient. Research on money, for
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19 example, finds that more passive transactions (e.g., automatic bill payments) reduce transaction
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21 salience and thus increase spending (Sexton 2015). Similarly, research on food consumption
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23 suggests that consumers eat more, and more quickly, when they consume more passively (e.g.,
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25 when eating popcorn from a large bowl rather than individual bags; Cheema and Soman 2008).
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27 The same should hold for time. That time is spent more passively means that transactions should
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29 be less salient, and spending occurs more automatically. This should reduce time costs' salience
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31 (and thus its weight in decision making).
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38 **P1b:** The fact that time is spent passively should make time costs less salient.
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42 Time Naturally Replenishes 43 44 45 46

47 A third reason we suggest that time costs may be less salient is that time naturally
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49 replenishes. Resources differ in the degree to which they are automatically replenished. Once
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51 money is spent, for example, it doesn't simply reappear in one's bank account overnight. It
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53 requires specific actions or circumstances to be regained. Time, in contrast, naturally resets
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3 (Soster et al. 2010; Linville and Fischer 1991). Consumers get 24 hours a day, every day, so even
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5 once one day's time is used up, another will soon be available.
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8 We suggest that time's natural replenishment should make time costs less salient.
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10 Knowing that there will always be more time available tomorrow should make consumers less
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12 conscious of how they spend their time today. Just as many Americans don't notice how much
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14 water they use because it seems infinitely available, consumers may overlook how much time
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16 they spend because they assume there will always be more. This perception of abundance should
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18 make resource management seem less necessary, and as a result, reduce the salience, and thus
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20 weighting, of time costs in decision making.
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26 **P1c:** The fact that time naturally replenishes should make time costs less salient.
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30 31 Time is Informally Transacted 32 33 34

35 A fourth reason we suggest time costs are less salient is that they are transacted less
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37 formally. Resources differ in how formally they are transacted. Money is the primary medium of
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39 economic exchange, for example, and is typically spent in relatively formal settings (e.g.,
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41 handing over money for goods, Bernstein 2008). Time, however, is not as immediately and
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43 visibly exchanged, and consumers are less used to deciding to trade a chunk of time for
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45 something else. Consequently, while consumers are familiar and well-practiced with trading
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47 money for goods and services, they are less accustomed to thinking about time in a transactional
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49 way (Soman 2001; DeVoe and Pfeffer 2007; Okada and Hoch 2004).
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3 We suggest that the informal nature of time transactions should reduce time cost's
4 salience. Given money's natural association with exchange, exchange may naturally activate the
5 notion of monetary costs. When thinking about which store to shop at, for example, consumers
6 may naturally wonder which costs more. But this is less likely to occur for time. Rather than
7 categorizing waiting in line at a store as an "expenditure" of time, consumers may instead simply
8 see it as time passing. Consequently, exchange (and decisions more generally) should be less
9 likely to activate the notion of time costs, and as a result, time costs may be neglected.
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21 **P1d:** Time's tendency to be informally transacted should make time costs less salient.
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26 Summary

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31 Taken together, we suggest that the fact that time is intangible, spent passively, naturally
32 replenished, and informally transacted should lead time costs to be less salient when making
33 decisions. This decreased salience, in turn, should reduce time costs' impact on choice. When
34 deciding which product to buy, for example, consumers often don't think about how much time
35 different options will take to acquire, set up, or use, and, as a result, any differences in time costs
36 are less likely to shape decision making.
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47 INHERENT CHARACTERISTICS IMPACTING WEIGHTING

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51 While certain features of time, as a resource, may reduce time costs' salience, even when
52 time costs are salient, we suggest that other inherent characteristics may still reduce their impact.
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3 Specifically, time tends to (1) have ambiguous value, (2) be endowed rather than earned, (3) be
4 hard to budget for, (4) have limited consequences for overspending, and (5) be perceived as more
5 available in the future, all of which should decrease time costs weight in decision making.
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12 **P2:** Even when time costs are salient, inherent characteristics of time (i.e., it has
13 ambiguous value, is endowed rather than earned, is hard to budget for, has limited
14 consequences for overspending, and is perceived as more available in the future)
15 should reduce time costs' weight in decision making.
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24 Time has Ambiguous Value

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28 While the value of money is generally consistent (e.g., a dollar is a dollar, no matter
29 what), time's value is more flexible, ambiguous, and context dependent. The value of an hour,
30 for example, depends on how it can be used (Festjens and Janiszewski 2015). We suggest that
31 this ambiguity, driven by time's non-fungibility and non-storability (Leclerc et al. 1995; Okada
32 and Hoch 2004; Soman 2001) reduces time costs' weight in decision making.
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40 *Time is not fungible.* Resources vary in their fungibility. While each unit of money (e.g.,
41 a dollar) is perfectly interchangeable with another, and retains its value across contexts (e.g., at a
42 grocery store vs. a restaurant), each moment of time is unique and cannot be replaced with
43 another one (Leclerc et al. 1995). Consequently, unlike money, which has relatively consistent
44 value, consumers value time differently depending on the context. Spending time with family on
45 Thanksgiving, for example, is not interchangeable with seeing them on an ordinary Thursday.
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3 *Time cannot be stored.* Resources also vary in their storability. While money can be
4 accumulated and inventoried for later use, for example, time cannot (Okada and Hoch 2004).
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6 Time is inherently fleeting, and if not used in the moment, simply passes by (Monga and Zor
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8 2019). Consequently, unlike money, which can be saved for future use, time's value depends on
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10 its immediate utility (i.e., what it can be spent on in the present). The value of shaving 15
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12 minutes off a long commute, for example, would be more valuable on a busier day when the
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14 extra time could be immediately put to good use.⁷
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19 Taken together, time's lack of fungibility and storability contribute to its ambiguous and
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21 context-dependent value. We suggest that this ambiguity, in turn, makes evaluating time's worth
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23 more challenging (Okada and Hoch 2004; DeVoe and Pfeffer 2007). While it is easy to assess
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25 what \$15 is worth, for example, the value of 15 minutes is much harder to judge and depends on
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27 many external factors (e.g., Is this time needed? What can be accomplished with it?). These
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29 factors are, themselves, often difficult to quantify (e.g., the meaningfulness of time spent is hard
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31 to quantify; Ward 2023), contributing to time's ambiguous value.⁸
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35 Importantly, we suggest that challenges assessing time's value ultimately lead time to be
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37 weighted less in decision making. Decision-makers tend to prioritize attributes that are easier to
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39 evaluate, while downplaying those that are more difficult to assess (Hsee 1996). When
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41 evaluating television sets, for example, warranty length is more evaluable than picture clarity,
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43 and thus tends to have greater impact on willingness to pay (Hsee 1996). Consequently,
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45 difficulty evaluating time's value should lead time costs to be weighted less.
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51 ⁷ That time is not transferable also contributes to its ambiguous value. While money can be passed between people,
52 time cannot (Monga and Zor 2019). Consequently, rather than being directly transferable, time's value depends on
53 its potential to free up another person's time. We focus on fungibility and storability because transferability is
54 mostly only relevant in interpersonal contexts.

55 ⁸ Whether one use of time is better than another (e.g., is it better to spend 15 minutes completing an online grocery
56 order or paying bills?) may itself be difficult to judge as well, exacerbating these challenges.
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3 **P2a:** Time's ambiguous value should reduce time costs' weight in decision making.
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8 Time is Endowed, Not Earned
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12 Beyond its ambiguous value, we suggest that time being endowed, rather than earned,
13 also reduces time costs' weight in decision making. Money is typically earned through effort or
14 action (e.g., a job). Time, in contrast, is an endowed resource that consumers naturally possess
15 without having to invest any effort or action.
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21 We suggest that this natural endowment, or reduction in required effort, should impact
22 valuation. People often infer value from effort (Bem 1967), and putting more effort or labor into
23 something can increase valuation (Norton, Mochon, and Ariely 2012). Similarly, many parents
24 ask their kids to complete chores to "earn" an allowance because they worry that giving them
25 unearned money will lead them to value it less and spend it more carelessly.
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33 Consequently, compared to earned resources like money, we suggest endowed ones like
34 time should be weighted less. In time-money tradeoffs, for example, consumers often appear to
35 prioritize saving "hard-earned cash" over unearned time, which they may perceive as less
36 valuable. Even consumers who can afford time-saving services (e.g., movers and cleaners) often
37 don't use them, because they don't want to pay for something they can do for "free" (Whillans et
38 al. 2017). In so doing, though, they overlook the time costs of those activities.
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49 **P2b:** The fact that time is endowed (vs. earned) should reduce time costs' weight in
50 decision making.
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Time is Hard to Budget For

We suggest that time costs may also receive less weight due to challenges in budgeting for time. Budgeting involves allocating resources to relevant categories (i.e., setting a budget) and tracking expenses against those allocations (Heath and Soll 1996; Cheema and Soman 2006; Sussman and Alter 2012; Zhang and Sussman 2018). Consumers may consider monetary categories like rent and entertainment, for example, and allocate funds for each. They then assign expenses (e.g., dinner at a restaurant) to relevant categories (i.e., entertainment), and monitor and adjust spending if a category exceeds its allocation. A fancy dinner may mean not going to the movies, for example, to ensure staying within one's entertainment budget.

We suggest that both setting a budget and tracking ongoing expenditures are more challenging for time.

Setting time budgets is difficult. To allocate resources across categories, budget setting entails estimating future needs (Heath and Soll 1996; Morewedge, Holtzman, and Epley 2007; Sussman and Alter 2012). Setting a monetary budget, for example, involves forecasting and planning how much money will be needed for various expenses (e.g., rent and entertainment).

But while monetary costs tend to be known, consistent, and precise (Sussman and Alter 2012), time costs are often variable, imprecise, or not provided. When buying milk at the store, for example, the monetary cost (i.e., price) is provided and stays the same throughout the day. But the time required to check out is rarely provided, varies across trips, and depends on a host of other factors (e.g., time of day and day of week). This irregularity should make time costs hard to predict. Consequently, while consumers can estimate, and thus budget for, the monetary cost of their weekly supermarket trip, budgeting how much time it will take is more difficult.

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3 *Tracking time expenditures is difficult.* Tracking expenditures involves noticing expenses
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5 (i.e., booking) and assigning them to categories (i.e., posting; Soster et al. 2010; Heath and Soll
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7 1996; Sussman and Alter 2012). Tracking money expenditures, for example, involves noticing a
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9 monetary expense (e.g., dinner at a restaurant) and categorizing it appropriately (e.g., into one's
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11 entertainment budget).
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14 Both noticing time expenditures, however, and categorizing them, should be more
15
16 challenging. As discussed in the salience section, while money often involves active spending
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18 (e.g., handing over cash), time is spent more passively. Similarly, while monetary expenditures
19
20 are carried forward across periods, time ones tend to be written off (Soster et al. 2010; Soman
21
22 2001). These inherent aspects of time should make time expenditures less salient, or noticeable.
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25 Time costs are also hard to categorize. Because time is inherently flexible and malleable,
26
27 category boundaries may be relatively fluid (Cheema and Soman 2006; Hsee 1995; Okada and
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29 Hoch 2004; Memmi and Etkin 2023). Dinner with friends could be categorized as
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31 "entertainment," for example, or "socializing." Time categories also tend to be quite broad (e.g.,
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33 work vs. non-work; Rajagopal and Rha 2009) or narrow (e.g., unique expenditures; Silverman,
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35 Etkin, and Srna 2023; Tonietto and Malkoc 2016), making it hard to meaningfully assign
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37 expenditures to accounts and track spending.
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41 Taken together, challenges with both setting budgets, and tracking expenditures, should
42
43 make time difficult to budget for. We suggest this difficulty, in turn, should reduce time costs'
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45 weight in decision making. Budgeting establishes clear spending objectives, which helps
46
47 consumers evaluate the impact of various expenditures (Heath and Soll 1996; Fernbach et al.
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49 2015; Rick, Cryder, and Loewenstein 2008). Consequently, difficulties budgeting for time
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3 should make it more challenging to both monitor time expenditures and evaluate their impact
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5 (Zhang et al. 2022), leading time costs to be weighted less.⁹
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10 **P2c:** Challenges with time budgeting should reduce time costs' weight in decision
11 making.
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17 Indeed, challenges with time budgeting may contribute to why consumers often appear to
18 favor money over time. When deciding whether to shop at a farther away, cheaper store or a
19 closer, more expensive one, for example, consumers must weigh time costs (e.g., travel time)
20 against monetary ones (e.g., prices). If consumers have a set budget for time (e.g., 30 minutes),
21 they can more easily determine if the additional time spent is worthwhile. Without such a budget,
22 however, evaluating time costs becomes more challenging, diminishing time's impact on choice.
23 In such situations, saving money may be prioritized over time, not necessarily because the extra
24 money is more valuable, but because it's hard to assess the time implications of a longer drive.
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38 Overspending Time Often Has Limited Consequences

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42 We suggest that the lack of immediate, tangible consequences for overspending time
43 should also reduce time costs' impact. While overspending money often has clear repercussions
44 (e.g., a transaction won't go through), impacts of overspending time are typically smaller, if they
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50 ⁹ Note, consumers may also perceive less of a need to budget for time, at all. Budgets are created in response to
51 constraints (Fernbach et al. 2015; Spiller 2011). But because time replenishes daily (Okada and Hoch 2004; Soster et
52 al. 2010), and demands on time tend to be underestimated (Buehler, Griffin, and Ross 1994), time may not seem as
53 consistently constrained. Budgeting also occurs when people are aware that expenditures are interdependent
54 (Fernbach et al. 2015; Spiller 2011). But because time is more flexible and malleable, consumers may underestimate
55 how time devoted to one activity impacts availability for others (Memmi and Etkin 2023). Together, these factors
56 may reduce the perceived need to budget for time.
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3 exist at all. If shopping takes five minutes longer than expected, nothing usually happens. In fact,
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5 there may only be an immediate consequence to overspending time if someone plans something
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7 right after, and even then, the consequence is usually minor (i.e., being a little late).
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10 We suggest that such limited consequences should reduce time costs' weight in decision
11
12 making. Recognizing overspending helps prevent future overspending (Sussman and Alter
13
14 2012). Getting one's credit card declined, for example, should encourage consumers to pay more
15
16 attention to their monetary expenditures and manage them better. Consequently, the lack of
17
18 immediate, tangible consequences for overspending time should have the opposite effect. It
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20 should make it harder to evaluate the impact of time expenditures and reduce the perceived need
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22 to manage time well. This, in turn, should lead time costs to be weighted less in decision making.
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28 **P2d:** The lack of tangible consequences for overspending time should reduce time
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30 costs' weight in decision making.
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35 Time is Perceived to be More Available in The Future
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40 Finally, we suggest that perceived future time slack should also reduce time costs' weight
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42 in decision making. Resource slack occurs when there are additional amounts of a resource left
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44 over that can be used for something else (Zauberman and Lynch 2005). A household that
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46 allocates \$500 a month for groceries, for example, but only spends \$300, will have \$200 left to
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48 use for other things (e.g., entertainment).
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51 But while consumers generally expect to have more resource slack in the future (vs. the
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53 present), this tendency is particularly pronounced for time (Zauberman and Lynch 2005).
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3 Today's time-consuming activities are often seen as unique situational factors that will not repeat
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5 in the future (Zauberman and Lynch 2005), leading to (erroneous) beliefs that time will be more
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7 available (Jhang and Lynch 2015). The unexpected traffic that happened today, for example, is
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9 seen as a one-off occurrence that is unlikely to happen again (Abreu, Memmi, and Etkin 2023).
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11 Consequently, people are often more willing to agree to time-consuming commitments (e.g.,
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13 leading a seminar) further in the future, because they (incorrectly) assume they will have more
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15 time slack, then, to fulfill them.
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19 We suggest that perceiving future time as more available should reduce time costs'
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21 weight in decision making. Expectations of future resource availability influence current
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23 spending (Berman et al. 2016; Schanbacher, Faro, and Botti 2023). Expecting to have more
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25 money in the future, for example, can contribute to present overspending. Consequently,
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27 expecting to have more time in the future may increase willingness to spend time in the present,
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29 leading time costs to be weighted less in decision making.
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35 **P2e:** That time seems more available in the future should reduce time costs' weight in
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37 decision making.
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42 Summary

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47 Taken together, we suggest that because time has ambiguous value, is endowed rather
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49 than earned, is difficult to budget for, has limited consequences for overspending, and is
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51 perceived to be more available in the future, time costs should be weighted less in decision
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53 making (even when they are salient). Consequently, when deciding which product to buy, or
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3 service to use, consumers may fail to consider how different options will impact their time,
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5 leading them to make less satisfying choices.
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10 **CONTEXTUAL FACTORS IN TIME COST CONSIDERATION**

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14 While inherent characteristics of time, as a resource, may lead to time costs to be less
15 salient and weighted less heavily, we suggest that certain contextual factors, as well as individual
16 and cultural differences, can shift these outcomes. Given contextual factors more readily lend
17 themselves to potential interventions, we focus attention there, but briefly mention individual and
18 cultural differences as they arise (see Web Appendix for more examples).¹⁰
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28 **CONTEXTUAL FACTORS IMPACTING SALIENCE**

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33 Contextual factors can draw attention to time costs. Specifically, we propose that (1) time
34 costs are more likely to be salient when they are explicitly provided. Further, even when they are
35 not explicitly provided, we propose that (2) contextual factors, such as time cues or reminders of
36 time passing, can also make time costs more salient.
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44 **P3:** Contextual factors (i.e., the explicit provision of time costs and related cues)
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46 should make time costs more salient.
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53 ¹⁰ Some cultures, for example, are more time-oriented and place greater value on productivity, efficiency, and
54 busyness (Bellezza, Paharia, and Keinan 2017; Etkin and Memmi 2021; Keinan and Kivetz 2011). Consequently,
55 one might expect time costs to be naturally more salient, and weighted more heavily, in these contexts. Time cues
56 should be more prevalent, for example, and the consequences for overspending time should be stronger.
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Explicit Provision

Explicitly providing time costs should make them more salient. While monetary costs are often explicitly provided, time costs are not. Prices are clearly specified when shopping, for example, but the time needed to navigate the store, or check out, is not, which, as discussed, should make those costs less salient.

In certain contexts, however, time costs are explicitly provided. Rideshare applications like Uber often display exact pickup times (e.g., 5 minutes), for example, and food delivery services like DoorDash estimate delivery time (e.g., 30-45 minutes).

Such explicit provision should make time costs more salient (and thus more easily incorporated into decision making). When given wait time information, for example, rideshare consumers may use it to determine which company to use or whether to pay extra to wait less.

P3a: Explicitly providing time costs should make them more salient.

Time-Related Cues

Even beyond explicit provision, though, we suggest that waiting cues, and time-related cues more generally, should also make time costs more salient. Stimuli in the environment can activate related concepts in consumers' minds (Berger and Heath 2005). Hearing "peanut butter and..." for example, may remind someone of jelly, and thinking of Halloween may remind them of the color orange (Collins and Loftus 1975).

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3 Time-related cues should have a similar effect. Stimuli related to waiting (e.g., slow
4 moving traffic or long store lines) should suggest that things will take a while, and time-related
5 cues (e.g., a ticking clock) should activate the concept of time.
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10 Once activated, the concept of time should impact decision making. A great deal of
11 research demonstrates that activated concepts shape action (Higgins 1996). Seeing Apple logos,
12 for example, can lead consumers to behave more creatively (Fitzsimons, Chartrand, and
13 Fitzsimons 2008) and voting at a school can encourage support for school funding (Berger,
14 Meredith, and Wheeler 2008).
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19 Along these lines, time-related cues should make time more salient and increase its
20 impact. Long lines at budget-friendly stores, for example, may make consumers more aware of
21 the time required to shop there. This awareness, in turn, might encourage them to shop elsewhere
22 (i.e., prioritizing time in subsequent shopping choices). Similarly, seeing cars drive past in the
23 express lane on the freeway may encourage consumers to pay to use it next time around.
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35 **P3b:** Time-related cues should make time costs more salient.
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40 **CONTEXTUAL FACTORS IMPACTING WEIGHTING**

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45 Beyond making time costs salient, we suggest that other contextual factors should lead
46 time costs to be weighted more heavily. These include (1) explicit prompting, (2) specialness, (3)
47 acquisition effort, (4) evaluation mode, (5) cost timing, and (6) relative magnitude.
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3 **P4:** Contextual factors (i.e., explicit prompting, specialness, acquisition effort,
4 evaluation mode, cost timing, and relative magnitude) should increase time costs'
5 weight in decision making.
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10 11 12 Explicit Prompting 13 14 15 16

17 Explicit prompting should encourage time cost consideration. Providing time costs
18 should make them more salient, but that doesn't necessarily mean they will have impact.
19 Reminding or encouraging consumers to consider time costs, though, should (not surprisingly)
20 increase weighting. Prompting consumers to think about the time costs of common household
21 chores (e.g., cooking or cleaning), for example, should encourage them to hire a service to help.
22 Indeed, ads for freelance labor platforms (e.g., TaskRabbit) often emphasize time spent on
23 chores to encourage using their services. Similarly, elicitation strategies that highlight time costs
24 (e.g., asking the maximum time consumers they would spend for a set amount of money, rather
25 than the other way around) boost time's perceived value and lead consumers to seek more money
26 for spending a unit of time (Monga et al. 2017).
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42 **P4a:** Explicit prompts or reminders to consider time costs should increase their weight
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Specialness

We suggest that contexts where time is “special” should also encourage time cost consideration. Special time refers to moments of significance or importance such as holidays (e.g., Thanksgiving) and life milestones (e.g., birthdays). Compared to a typical Thursday in November, for example, most Americans see Thanksgiving as more special. They take off work, spend time with family, and engage in traditions (Zauberman, Ratner, and Kyu 2009). Similarly, one’s birthday is usually more special than other days that week.

We suggest that contextual factors that make time special should encourage time costs to be weighted more heavily. Employers frequently pay employees more to work on holidays, for example, recognizing employee’s increased valuation of that time. Similarly, while consumers might normally be willing to sit in traffic, on Thanksgiving they might be more willing to pay for an express lane to spend more time with family. When time is special, it should be valued more and weighted more in decisions.

P4b: Time being “special” should increase time costs’ weight in decision making.

Acquisition Effort

Another contextual factor we suggest should lead time costs to be weighted more heavily is the effort required to acquire that time. As discussed, unlike money, time is naturally endowed, and typically replenishes without any additional effort or action (Soster et al. 2010; Linville and Fischer 1991). In certain situations, however, consumers expend effort to “earn” time. Some

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3 companies allow employees to work to earn paid time off or leave early, and people may decide
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5 to complete a task ahead of schedule to avoid working over the weekend.
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8 We suggest that such effort should lead time to be weighted more heavily. Since exerting
9
10 effort can increase valuation (Norton et al. 2012), time should be valued more when it required
11
12 effort to acquire. Compared to a regular weekend, for example, someone who “worked” to earn a
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14 free weekend should be less inclined to trade it for an extra work shift. Similarly, a 15-minute
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16 break may be valued more if one had to “earn” it than if it was provided automatically.
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21 **P4c:** Needing to expend more effort to acquire time should increase time costs’ weight
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23 in decision making.
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26 27 28 Evaluation Mode 29

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33 We suggest that evaluation mode (i.e., whether choice options are evaluated jointly or
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35 separately; Hsee 1996) should also shape time costs’ weight in decision making. When choosing
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37 where to eat, for example, consumers can compare restaurants (e.g., considering which has better
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39 food) or separately assess options (e.g., Is this place worth going to?). Similarly, when deciding
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41 where to shop, consumers can compare two stores, or evaluate each separately.
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45 When separately evaluating options, less importance is given to attributes that are harder
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47 to evaluate by themselves. Knowing a cookbook has 200 recipes, for example, is harder to
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49 evaluate than the fact that it is highly rated, so in separate evaluation, number of recipes may
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51 receive less weight. But when options are evaluated jointly, comparison can make harder-to-
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53 evaluate attributes easier to assess, increasing their impact (Hsee 1996; Hsee et al.1999).
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3 Knowing that a cookbook has 200 recipes becomes much more informative when compared to
4 one with only 100, so joint evaluation should lead this dimension to become more important.
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8 Building on this, since time tends to be more difficult to evaluate than money (Okada and
9 Hoch 2004; DeVoe and Pfeffer 2007), we suggest that joint evaluation should lead consumers to
10 place greater weight on time costs. When deciding whether to eat at a certain restaurant on a
11 busy Saturday night, for example, consumers may prioritize type of food over wait time because
12 type of food is easier to assess without a reference point. Consequently, separate evaluation may
13 lead people to opt for a sushi restaurant with a 40-minute wait. But if consumers consider
14 multiple options instead (i.e., joint evaluation), that may encourage them to realize that the sushi
15 restaurant involves an excessively long wait. This, in turn, should make the sushi restaurant less
16 appealing, and encourage choosing an option with a shorter wait time instead.
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31 **P4d:** Joint (vs. single) evaluation should increase time costs' weight in decision
32 making.
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38 Cost Timing 39 40 41

42 *When* time costs are incurred should also impact how they are weighted. The temporal
43 distance between the decision to spend a resource (i.e., purchase) and the actual transaction (i.e.,
44 payment) can vary. When buying food at the grocery store, for example, purchase and payment
45 often happen in close succession. Consumers buy food and pay for it at checkout. In other
46 situations, however, the temporal distance can be longer. Credit cards, for example, allow
47 consumers to purchase today but pay later, delaying when monetary costs are incurred.
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3 Such temporal distance should impact how heavily time costs are weighted. Temporally
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5 distant events tend to feel more abstract and psychologically far away, which reduces their
6
7 impact (Trope et al. 2007; Lynch and Zauberman 2007). Further, the psychological discomfort
8
9 associated with spending resources decreases as the time between purchase and payment
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11 increases (Prelec and Loewenstein 1998). Consequently, when resources require less immediate
12
13 payment, they should have less impact on decisions.
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17 Building on this, we suggest that situations that reduce time costs' temporal distance
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19 should lead them to be weighted more heavily. Indeed, when paying in time is more imminent,
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21 consumers often place greater weight on it. When purchasing Disney tickets in advance, for
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23 example, longer wait times may not loom large, so consumers are less likely to choose the pricier
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25 express pass. But when about to queue up at the park, time spent waiting should become a more
26
27 important factor in their decision.
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33 **P4e:** Shrinking the temporal distance between decision and transaction should increase
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35 time costs' weight in decision making.
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38 39 40 Relative Magnitude

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44 Finally, we suggest that the relative magnitude of time costs should affect how they are
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46 weighted. Relative magnitude refers to the percentage of total task time that a given time cost
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48 accounts for. For a three-day vacation with nine hours of travel, for example, travel time
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50 represents (i.e., costs) 12.5% of the total vacation duration.
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3 Given that time's value varies across contexts (Leclerc et al. 1995), we suggest that
4 consumers should prioritize time costs more when they make up a larger proportion of the total
5 time. Consumers evaluate outcomes relative to reference points rather than in absolute terms
6 (Kahneman and Tversky 1979; Buechel and Morewedge 2014). With money, for example, rather
7 than assessing its value based solely on the absolute amount (e.g., \$100), consumers value it in
8 relation to a salient account (Buechel and Morewedge 2014). Consumers prefer earning less
9 money, for instance, if it means earning more than their peers (Solnick and Hemenway 1998).

10
11 Building on this, we suggest that regardless of objective duration (e.g., 15 minutes), time
12 costs should be weighted more heavily when they constitute a larger portion of the activity's
13 total duration. Consumers should be willing to pay more to reduce 15 minutes of waiting, for
14 example, if it is part of an hour-long wait (25% of the total time) than a five-hour-long wait (5%
15 of the total time).

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33 **P4f:** Increasing time costs' objective or subjective magnitude should increase their
34 weight in decision making.

35 36 37 38 39 40 **CONTEXTUAL FACTORS IMPACTING BOTH SALIENCE AND WEIGHTING**

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45 Some contextual factors may also increase both salience and weighting. We suggest this
46 includes 1) perceived time constraints, 2) awareness of alternative time uses, and 3) seeing time
47 as tradeable for money.

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54 **P5:** Contextual factors (i.e., contexts that increase perceived time constraints,

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3 awareness of alternative time uses, or make time seem tradeable for money)
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5 should make time costs more salient and increase their weight.
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10 Perceived Time Constraints

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15 Resource constraints arise when consumers lack the resources to accomplish specific
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17 goals or tasks (Cannon, Goldsmith, and Roux 2024). Such constraints can be objective or
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19 subjective (Tully, Hershfield, and Meyvis 2015; Dias, Sharma, and Fitzsimons 2022). Someone
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21 who wants to get in shape but doesn't have the money to purchase a gym membership, for
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23 example, might feel objectively financially constrained, while someone who is objectively well
24
25 off may feel constrained if they cannot keep up with their friends' extravagant lifestyles.
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28 We suggest that feeling time constrained should make time costs more salient.
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31 Constraints encourage attention to resource allocation (Shah, Mullainathan, and Shafir 2012;
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33 Spiller 2011). Compared to the beginning of a budgetary period, when money is more abundant,
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35 for example, expenses become more noticeable towards the end, when there's less (Soster et al.
36
37 2010). Consequently, contexts that increase subjective time constraints should increase time
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39 costs' salience. Someone who's busy at the office, for example, should be more likely to notice
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41 that the elevator is slow, or that it's taking a while to get lunch.
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45 Beyond salience, though, we suggest that subjective time constraints should also lead
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47 time costs to be weighted more heavily. Not only does scarcity increase attention, but it also
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49 increases opportunity cost consideration and the perceived value of the resource (Shah et al.
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51 2012; Shah, Shafir, and Mullainathan 2015; Spiller 2011). Consequently, when time seems
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53 constrained, time costs should have a bigger impact on decision making. Rather than picking the
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3 cheapest or tastiest restaurant, for example, someone who is feeling busy at the office might just
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5 opt for the place with the quickest service.
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10 **P5a:** Contexts that highlight time constraints should make time costs more salient and
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12 increase their weight in decision making.
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17 Similar effects should also occur for individuals who are chronically time constrained.¹¹
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21 Alternative Time Uses 22 23 24 25

26 Contextual factors that highlight alternative time uses should also play a role. Stimuli can
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28 increase consumers' awareness of different ways to use time. Seeing someone else exercising
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30 while heading to dinner, for example, or explicit suggestions to consider doing something
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32 different (Frederick et al. 2009) should encourage thoughts about alternative time allocations.
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35 We suggest that cues like these should make time costs more salient. As discussed, the
36
37 fact that time is intangible and spent passively means that time expenditures are often difficult to
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39 notice or see. But cues that remind people that they could spend their time differently should
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41 make them more aware of time expenditures. Scrolling through social media can lead people to
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43 lose track of time, for example, but receiving notifications related to work obligations should
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45 prompt them to become more aware that time is being spent.
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51 ¹¹ Consumers with demanding jobs, who face persistent goal conflicts (e.g., balancing work and family; Etkin et al.
52 2015), or who possess certain traits (e.g., chronic procrastinators) may chronically feel time poor, and we suggest
53 that such chronic perceptions should have similar effects. Investment bankers who regularly work 100-hour weeks,
54 for example, may consider time costs more and weight them more heavily. Similarly, given time is perceived to pass
55 more quickly as people age (Bejan 2019), younger individuals may feel less chronically time constrained, which
56 should reduce time cost consideration.
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Beyond salience, though, we suggest that considering alternative time uses should also highlight opportunity costs (i.e., the value of foregone options; Frederick et al. 2009; Okada and Hoch 2004; Spiller 2011), which should increase time costs' impact on decision making. Consumers often fail to consider opportunity costs unless explicitly prompted (Frederick et al. 2009), but cues that make alternative time uses more accessible should provide that encouragement. Further, because time's perceived value depends on its potential uses (Festjens and Janiszewski 2015), heightened awareness of opportunity costs should boost time's value, and thus its importance. Indeed, work in financial decision making suggests that merely emphasizing opportunity costs curbs spending (Frederick et al. 2009; Bartels and Urminsky 2015). Along these lines, consumers' willingness to wait in a long return line may change when prompted to consider other potential uses of that time (e.g., socializing with friends). This awareness can increase time cost consideration and encourage alternative choices.

P5b: Contexts that highlight alternative time uses should make time costs more salient and increase their weight in decision making.

Similar effects should occur among individuals who have alternative time uses chronically accessible.¹²

¹² Consumers with high propensity to plan (Spiller 2011; Lynch et al. 2010), for example, or in professions with perpetual time requests (e.g., Uber drivers or TaskRabbit freelancers, who could always offer ad hoc services) should often consider how to allocate their time. This should enhance the salience and weighting of time costs. Planners, for example, often consider potential future time allocation, which should make them more aware of alternative time uses, and more careful about how they spend their time. Similarly, just as situational cues may make people more aware of what they could do instead of waiting in line, chronic accessibility of alternative options may make people more interested in doing something else with the time.

Trading Time for Money

We suggest that contexts that encourage consumers to see time as tradeable for money should also lead to similar effects. Having jobs where one sells their time (e.g., getting paid by the hour or billing in 15-minute intervals) can lead people to see their time as equivalent to money (DeVoe and Pfeffer 2007; Okada and Hoch 2004). This, in turn, should increase the salience and weighting of time costs.

Regarding salience, when time is associated with money, its value becomes more salient (DeVoe, Lee, and Pfeffer 2010). We suggest this should make people more aware of what else they could do with their time. Shifting from charging by project to by the hour, for example, should make freelance consultants more aware of the economic value of their time. Consequently, when considering taking a break from work to run personal errands, they may think about the income they could have earned instead. The heightened awareness of time's value should make the time costs of personal errands more salient and encourage consideration of the opportunity costs of not working during that period.

We further suggest that time-equals-money beliefs should lead time costs to be weighted more heavily. Viewing time as equivalent to money simplifies time's valuation and facilitates its integration into decision making. As discussed, because time's value is inherently more difficult to judge (Okada and Hoch 2004; DeVoe and Pfeffer 2007), consumers often neglect time costs when making decisions (Hsee 1996). But framing time in monetary terms makes it easier to understand time's value and thus the opportunity costs of spending it (DeVoe et al. 2010; Okada and Hoch 2004). Consequently, time costs should receive more weight. When choosing among options that trade-off time and money, for example, consumers who recognize that the extra time

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3 spent could be used for billable projects should be more likely to prioritize time savings.
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8 **P5c:** Contexts that encourage consumers to think about trading time for money should
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10 make time costs more salient and increase their weight in decision making.
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14 15 **POTENTIAL INTERVENTIONS** 16 17

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19 By delineating why consumers neglect time costs, and factors that encourage their
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21 consideration, the framework highlights potentially beneficial interventions for both consumers
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23 (i.e., to improve well-being and productivity), and companies and organizations (e.g., to more
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25 effectively market time-saving products and services).
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31 **Consumer Well-being** 32 33 34

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36 The framework suggests various potential interventions to help consumers spend time in
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38 more satisfying ways. Given time costs are weighted more heavily when time is “*special*” (e.g., a
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40 holiday), for example, one easy way to encourage time cost consideration should be to frame that
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42 time as special. Treating the weekend like a vacation (West, Mogilner, and DeVoe 2021), for
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44 example, or a certain evening as a special occasion, should make that time seem more valuable
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46 and encourage more careful thinking about how to spend it.
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50 Similarly, the discussion around *effort to acquire* time suggests that making time seem
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52 more earned should also increase time cost consideration. Rather than just seeing a lunch break
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3 as a break, for example, or the evening as time one is not working, framing those moments as
4 time one has earned should encourage more considered spending.
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8 Further, given that *explicit provision* and *explicit prompting* encourage time cost
9 consideration, consumers may benefit from asking for, or collecting, such information. When
10 picking a rental car company, for example, consumers often focus on which company has the
11 lowest price. But neglecting how long it will take to pick up the car may lead to negative
12 experiences at the beginning of what was supposed to be a relaxing vacation. Consequently, in
13 situations like these, asking questions like “how much time will this take?” should encourage
14 greater consideration and more satisfying choices.
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24 Related ideas hold for other aspects of the framework. Rather than saying yes or no to
25 something, for instance, asking “what else could be done with this time?” should have similar
26 effects. It may even be worth devising an hourly rate for one’s time. Given contexts that
27 encourage *trading time for money* should increase time cost consideration, this approach may
28 help consumers better value their time, and make choices that take that value into account.
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38 Productivity

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42 The framework can also be leveraged to improve consumer productivity. *Identifying*
43 *alternative time uses*, for example, should encourage time cost consideration and help people get
44 more out of their time. Especially for smaller amounts of time (e.g., five or 10 minutes), for
45 which alternative uses may be particularly inaccessible (Festjens and Janiszewski 2015), being
46 explicit about what can be done in that time (e.g., waiting on hold with customer service could be
47 used to write a grocery list) should encourage consumers to spend it more effectively.
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3 Along these lines, while time can't be accumulated as easily or flexibly as money
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5 (Jacoby, Szybillo, and Berning 1976; Okada and Hoch 2004; Soman 2001; Soster et al. 2010), it
6
7 is possible to rearrange certain activities, or do more of something now to free up time later, to
8
9 aggregate time savings. Considering what they could do with a larger block of time (e.g., 30
10
11 minutes or an hour) may encourage consumers to think about how to "create" that amount.
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15 The framework also suggests it may be beneficial to *make future time seem less*
16
17 *available*. As discussed, the perception that time will be more available in the future contributes
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19 to it being weighed less heavily now. Consequently, by managing perceived future availability,
20
21 consumers may be able to improve time management today. When looking out weeks, or
22
23 months, into the future, one's calendar is often empty, which may contribute to the belief that
24
25 time is available. But many activities (e.g., going to the gym or picking up the kids from school)
26
27 recur every week. Turning these seemingly one-off events into reoccurring calendar elements
28
29 may help consumers realize that future time is not, in fact, more available, and encourage them
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31 to weight time costs more in the present.
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35 The same may hold true for backfilling past time. While time is often *spent passively*, and
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37 is *difficult to budget for* in advance, going back and cataloging (i.e., booking) what was done
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39 should make consumers more aware of how that time was spent. This, in turn, should make the
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41 time costs of future activities more salient, and increase their weighting.
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45 46 47 Companies and Organizations 48 49 50

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52 The framework also suggests potentially useful interventions for companies and
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54 organizations. While many products and services save consumers time, given time costs are
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3 often neglected, companies that make such products and services may need to think critically
4 about how to frame their value propositions. Take services that allow consumers to use a faster
5 security line at the airport (e.g., CLEAR). While their messaging focuses on avoiding the lines,
6 *explicit provision* of time costs may be just as, if not more, impactful. Showing live wait times
7 for regular airport lines on their website, for example, should raise the salience of time costs and
8 encourage consumers to weight them more.
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11 Similarly, rather than simply telling consumers they save time, it might be more effective
12 to encourage consumers to think about what they would do with that extra time (e.g., “Skip the
13 wait, start your vacation early with a relaxing coffee break”). This sort of messaging should be
14 especially impactful during *special time* periods, such as holidays (e.g., “This Thanksgiving,
15 spend more time watching football with Dad, and less time in airport lines”). As discussed in the
16 framework, making *alternative time uses more accessible* and emphasizing costs of *special time*
17 should both increase time costs’ salience, and encourage them to be weighted more.
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20 Highlighting *acquisition effort* may have similar effects. Encouraging consumers to think
21 about how hard they worked to earn their free time should make them more willing to outsource
22 time intensive tasks. While putting a home up for sale-by-owner may save money, for example,
23 reminding consumers of the effort expended to earn that time should make them more willing to
24 pay the real estate agent commission.
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27 The framework also suggests potential changes to existing marketing tactics. Some online
28 news outlets (e.g., *The New York Times*), for example, provide estimates of how long various
29 articles will take to read. While the intention may be to help consumers match content to
30 available time, the approach may have unintended consequences. *Explicitly providing* time costs
31 should lead time costs to be weighted more heavily, but this may lead consumers to avoid longer,
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3 potentially weightier pieces. Consequently, depending on their goals, companies may not want to
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5 provide such information.
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10 **GENERAL DISCUSSION**

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14 Time is one of our most precious resources and plays a crucial role in every aspect of
15 consumption. But when it comes to making decisions, consumers often seem to neglect how their
16 choices will impact their time. While previous research has explored the consequences of
17 suboptimal time allocation or undervaluing time (e.g., compared to money; Hershfield et al.
18 2016; Whillans et al. 2016; Whillans et al. 2017), it is less clear *when* and *why* consumers neglect
19 time costs, and what might encourage people to consider them.
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28 This paper introduces the notion of “time cost consideration,” and suggests that time, as a
29 resource, possesses inherent characteristics that discourage consumers from considering the time
30 implications of their decisions. Integrating work from disparate disciplinary perspectives, we
31 provide a comprehensive yet parsimonious explanation for why time costs may be neglected, and
32 what might make them more focal. As a result, the framework provides specific propositions that
33 can be tested in future empirical work and paves the way for subsequent investigations of time
34 costs’ role in decision making.
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47 **Theoretical Contributions**

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51 This work makes several important contributions. First, it helps explain an important
52 disconnect. As discussed, despite time’s importance for happiness and well-being, consumers
53 often struggle to spend time well. They often feel pressed for time (Etkin et al. 2015; Hershfield
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3 et al. 2016; Leclerc et al. 1995; Monga et al. 2017; DeVoe and Pfeffer 2011), wish they had more
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5 of it (Sharif et al. 2021), and say that they want to spend it in more satisfying ways (Gilovich and
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7 Medvec 1995; Roese and Summerville 2005). But when it comes to their actual choices,
8
9 consumers don't always behave like time is valuable. Our framework helps explain why.
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11 Specifically, by delineating key aspects of time as a resource, it sheds light on the underlying
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13 psychological drivers that contribute to time costs' neglect, and thus, this inconsistency.
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17 Second, the framework sheds light on the interplay between time and decision making.
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19 While extensive research has considered money (Cannon et al. 2019; Hamilton et al. 2019), time
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21 has received less attention (Leclerc et al. 1995). Further, work that has considered time has
22
23 largely focused on time's impact on decisions (e.g., how feeling rushed might impact choice;
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25 Dhar and Nowlis 1999). The current work considers the opposite: Rather than how time impacts
26
27 decisions, how decisions impact time. Our perspective highlights that time use is also an output,
28
29 or result, of decision making, and that failing to consider this can lead to less satisfying
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31 expenditures. Given that our lives are the sum of our minutes, these misallocations can have
32
33 substantial implications for consumer well-being.
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37 Third, by integrating disparate prior findings, and combining them with new theorizing,
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39 the framework provides a comprehensive conceptualization underlying time cost consideration.
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41 While some research has looked at time in relation to money (Leclerc et al. 1995; Mogilner and
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43 Aaker 2009; Okada and Hoch 2004; Soman 2001; Soster et al. 2010; Zauberman and Lynch
44
45 2005), as discussed, time is also important in its own right. Further, although work on time in
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47 consumer behavior has revealed many important insights (Chung et al. 2023; Festjens and
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49 Janiszewski 2015; Graham 1981; Jacoby et al. 1976), it has been rather disconnected. By
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51 focusing on the nature of time as a resource, integrating disparate streams of work, and
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3 organizing time's inherent characteristics into aspects that affect salience, weighting, or both, we
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5 shed light on why time costs are neglected in decision making, and provide insights into how
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7 various marketplace actors can encourage them to be considered. In so doing, this work also puts
8
9 more structure around the idea of time as a resource, deepening what it means to think about time
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11 in this way and the implications for consumer decision making.
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17 Implications and Future Directions

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21 The framework also has a variety of interesting implications and suggests new directions
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23 for future research.
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26 *Impact of Technology.* By delineating why time costs may be neglected, and what
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28 encourages their consideration, the framework sheds light on how technology may impact the
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30 perception and valuation of time.
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33 First, by making time more *tangible* (i.e., visible), time tracking technologies should
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35 make it more salient. Many technologies now track how consumers spend their time.
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37 Smartwatches track how long consumers sleep, for example, and smartphones track how long
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39 consumers spend on various apps. By making it easier to see how much time is spent on different
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41 activities (e.g., 75 minutes a day on email), these technologies should increase the salience of
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43 time spent, which should encourage time cost consideration. Like credit card statements for
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45 spending money, knowing how much time one spends on different things, or even that one's
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47 time is being recorded, should make people think more about how they spend their time, and
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49 whether it is being spent as intended.
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3 Second, by facilitating *time budgeting*, time tracking and other technologies should also
4 increase weighting. Many technologies don't just track time, they combine time expenditures
5 into groups, or categories. Weekly screen time reports, for example, categorize things like
6 Facebook and Messages into a Social group, and Mail and Calendar into a Productivity group.
7
8 As discussed, it is usually challenging to identify appropriate categories for time, and to assign
9 time expenditures to them. But categorizing tracked time should make it easier to both *budget for*
10 *time*, and *track expenditures*, increasing time's impact on decision making.
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19 Other features should have similar effects. Apps and smartphone operating systems, for
20 example, allow users to set time limits for usage (e.g., up to 90 minutes a day on TikTok). They
21 also allow consumers to monitor spending relative to those benchmarks (e.g., how many minutes
22 spent on a given day) and receive feedback or experience consequences if they spend too much
23 time (e.g., getting locked out of the app). By making it easier to *track expenditures* and creating
24 *tangible consequences for overspending*, these technologies should facilitate time budgeting, and
25 as a result, increase time costs' weight in decisions.
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35 Third, specific features of technologies may also impact both salience and weighting.
36 Time spent consuming media, for example, can be more or less *passive*. Reading a physical
37 newspaper requires turning pages to keep reading, but when watching TV, the next show starts
38 without any action required. As noted in the framework, time costs are often less salient because
39 time tends to be *spent more passively*. But features that encourage more active spending (i.e.,
40 require action) should increase time costs' salience, and thus its weighting.
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49 *Understanding Other Resources.* The framework can also be leveraged to inform
50 whether, when, and why consumers consider other resources beyond time. Many aspects that
51 make time less salient or weighted, for example, are less present for money. Money is *more*
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3 *tangible* than time, is *spent more actively*, and *transacted more formally* (Jacoby et al. 1976;
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5 Okada and Hoch 2004). Money's value is also *less ambiguous*, and money is more likely to seem
6
7 *earned*. Consequently, in addition to explaining why time costs may be neglected, or have
8
9 limited impact, the framework sheds light on why money may be more focal.¹³
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11

12 The framework also provides insight into other resources more broadly (e.g., physical
13
14 space or mental effort). Consumers pay for things in more than just time and money. Buying in
15
16 bulk requires physical space, for example, and researching choice options requires mental effort.
17
18 While a couple of recent marketing papers (Cannon et al. 2024; Dorsch, Törnblom, and Kazemi
19
20 2016; Shaddy and Shah 2018) have begun to explore these additional resources, given consumers
21
22 use them to achieve things of value, they deserve further attention. By delineating factors that
23
24 shape time cost consideration, our framework provides a useful foundation to begin to study
25
26 other resources in greater detail.
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31 Mental effort, for example, has much in common with time. It is *intangible* (i.e., can't see
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33 or touch it), *naturally replenishes* (i.e., you get more tomorrow), and *informally transacted* (i.e.,
34
35 there aren't formal systems for exchanging it). Further, mental effort has *ambiguous value* (i.e., it
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37 is non-fungible and non-storable), is *endowed not earned*, and is very *hard to budget for*.
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39 Consequently, our framework would suggest that consumers should neglect mental effort costs,
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41 potentially even more so than time ones. That said, it also suggests that contextual factors like
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43 related *cues* (e.g., something being called "complex"), or the salience of *alternative uses* (e.g., an
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45 upcoming meeting that requires lots of mental bandwidth) should make mental effort costs more
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47 salient, and thus may encourage their weighting.
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53 ¹³ That said, the framework implies that changes in technology may make monetary costs less salient. Electronic
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55 payment methods (e.g., Apple Pay), along with other apps and services (e.g., TikTok's new Shop feature), make
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57 money *less tangible*, and in requiring fewer steps to pay, make spending money more *passive* and *informal*.
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59 Together, these aspects may reduce monetary costs' salience, potentially reducing their impact on decision making.
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3 With physical space, however, the framework suggests several reasons why it may be
4 more naturally considered. Physical space is *more tangible*, has *more consistent value* (i.e., is
5 storable), and costs are often *explicitly provided* (e.g., most sofas are accompanied by
6 information about their measurements). Consequently, physical resource costs may be more
7 salient at baseline. Hopefully the framework will encourage future research into other resources,
8 and when and why they are more likely to be considered in decision making.
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11 The framework also has implications for how consumers make tradeoffs *between*
12 resources. Weighting one resource more often means weighting another one less. The framework
13 sheds light on what it is about certain resources (i.e., their dimensions along with contextual
14 factors) that makes them more or less likely to be prioritized. Resources that seem *more tangible*,
15 *actively spent*, and *earned*, for example, should be prioritized relative to ones that are less that
16 way. Moreover, interventions that boost dimensions that increase salience and weighting should
17 make a given resource more focal.
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19
20 *Interpersonal Relationships.* The framework also has implications for interpersonal
21 relationships. Whether explicitly or not, consumers often give time to others (Donnelly et al.
22 2021). Rather than both parents taking care of young children over the weekend, for example,
23 one may offer to take them to a park to give their spouse time to do other things. But while this
24 time “gift” may be well-intentioned, making an active choice to transfer time to one’s partner
25 could potentially change how that time is perceived (e.g., as more *formally transacted*, as having
26 less *ambiguous value*, or as more *tradeable for money*), creating unintended conflict. For givers,
27 time costs should be particularly salient, and as a result, givers may feel like time costs deserve
28 more weight in the recipient’s decisions. Consequently, givers may care a lot about how the
29 recipient spends the time, and whether it was spent in a way that they personally find valuable.
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3 *Potential Interactions.* While the framework treats the factors as independent, they may
4 sometimes be interdependent, or interact. In some cases, for example, the presence of one factor
5 may play up or amplify another. When people feel *time constrained*, for instance, they may also
6 be more likely to think about *alternative uses* for their time. Similarly, when people think more
7 about *alternative uses* for their time, they may also feel more *time constrained*. Consequently,
8 these two factors may work together to lead time costs to be even more salient and more
9 considered. The presence of one factor may also mitigate another. Thinking about *time in terms*
10 *of money*, for example, should reduce perceptions of *time as informally transacted*, attenuating
11 the latter's impact on time costs' salience and weighting. See Appendix for more examples.
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26 Conclusion

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31 Consumption inevitably involves time. Whether choosing products, using services, or
32 having experiences, every aspect of consumer behavior takes time to pursue. But while
33 consumers say they value their time (Hershfield et al. 2016; Whillans et al. 2017) and aspire to
34 spend time in satisfying ways (Mogilner, Whillans, and Norton 2018; Sharif et al. 2021), when it
35 comes to making decisions, that doesn't always appear to be the case.
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42 This work provides a comprehensive framework to explain when and why consumers are
43 more or less likely to consider how various actions impact their time. By reviewing existing
44 research and combining it with new insights, we shed light on specific characteristics of time, as
45 a resource, that lead time costs to be neglected, contextual factors that should encourage them to
46 be considered, and implications for consumers, companies, and other marketplace actors that
47 wish to support effective time use and improve well-being.
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APPENDIX: EXAMPLES OF INTERACTIONS

	Factor 1	Factor 2	Summary	Examples
Amplification of Time Cost Consideration	Acquisition Effort Evaluation Mode	'Special Time' Explicit Provision	Effort to acquire "special" time may increase time costs' weight in decision making. Jointly evaluating numeric (vs. categorical) time costs may increase time costs' weight in decision making.	The harder someone works to get time off for a special purpose or event (e.g., Mother's Day), the more they should value that time, increasing special time's impact on weighting. Numeric time costs (e.g., 30-min wait) are harder to evaluate separately than categorical ones (e.g. a "short" wait), increasing joint evaluation's impact on weighting.
Mitigation of Time Cost Consideration	Perceived Time Constraints	Alternative Time Uses	Since constraint increases attention to opportunity costs (Spiller 2011), the more time constrained one feels, the more that alternative time uses may also be top of mind. Likewise, since perceiving greater goal conflict can make time seem more limited (Etkin et al. 2015), the more that alternative time uses are accessible, the more time constrained one may also feel. Both phenomena should increase time costs' salience and weight in decision making.	A busy consumer standing in line to make a return and who thinks about the different ways they could spend that time may become even more aware of its cost and more likely to leave the line to do something else of greater value instead (even if it means giving up money).
	Time's Ambiguous Value	Relative Magnitude	Time costs of subjectively greater magnitude may be perceived to have less ambiguous value, increasing time costs' weight in decision making.	While the value of a 30-minute layover in the context of an hour-long flight is clear (e.g., I could have flown half the distance in that time), the same time cost feels much more ambiguous in the context of a 10-hour flight, reducing its impact on choice.

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Exacerbation of Time Cost Neglect	Trading Time for Money	Time's Informal Transaction	Contexts that encourage consumers to think about trading time for money should reduce perceptions of time as informally transacted, increasing time costs' salience in decision making.	Gig economy workers, who are more accustomed to trading time for money, may be more acutely aware of differences in wait times across shops or stores and thus more likely to incorporate this in their choices.
	Explicit Provision	Time Budgeting is Challenging	Explicitly providing time costs should make time budgeting less challenging, increasing time costs' weight in decision making.	Consumers might find it easier to meal plan (i.e., budget time for cooking) when using a recipe app that provides explicit cook time estimates (i.e., costs), compared to cookbooks that lack such information.
	Alternative Time Uses	Expected Future Availability	Considering alternative time uses should decrease the expectation that time will be more available in the future, increasing time costs' weight in decision making.	When a vacationer debates whether to accept a voucher for a later flight, considering other activities they could do with that time instead (trying a new restaurant, visiting another landmark) should reduce their perceptions of future time slack and lead them to place more weight on time in their decision.
	Expected Future Availability	Cost Timing	Larger gaps between deciding to spend time and the actual transaction should lead consumers to expect to have even more time at that future point, decreasing time costs' weight in decision making.	Consumers may weigh time costs less in decisions impacting the distant future (e.g., decide not to buy a time-saving EZ pass for next month's commute) because they believe they'll have more time available than they will.
Cost Timing	Limited Consequences of Overspending	Larger gaps between deciding to spend time and the actual transaction should make the potential consequences for overspending time even less tangible, decreasing time costs' weight in decision making.	Consumers may weigh time costs less in decisions impacting the distant future (e.g., decide not to apply for TSA pre-check in preparation for travel next year) because there are even fewer tangible consequences for overspending future time (e.g., spending extra time in airport security that results in missed flights)	

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WEB APPENDIX

Time Cost Consideration

TABLE OF CONTENTS

[Pilot Survey2](#)

[Web Appendix Figure 1: Frequency of Time Cost Vs. Monetary Cost Consideration.....5](#)

[Web Appendix Figure 2: Relative Importance of Time Costs Vs. Monetary Costs.....5](#)

[Web Appendix Table 1: Examples of Individual and Cultural Differences.....6](#)

[Web Appendix Table 2: Complete List of Propositions.....10](#)

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PILOT SURVEY: TIME COST CONSIDERATION IN DECISION MAKING

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The pilot survey had two goals. First, we wanted to examine how often consumers mention considering time costs in their decisions. Second, we wanted to examine time costs' relative importance in decision making. Consequently, we asked participants to write down a decision they had made recently, describe the factors they considered when making that decision, and then rate the importance of various factors in driving that decision.

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Design and Method

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We aimed to recruit one hundred US participants on Prolific (pre-registration: https://aspredicted.org/HL7_G13). One hundred twenty-four Prolific workers signed up to participate. Of these, 74.2% passed the pre-registered exclusion criteria (i.e., they passed the English fluency tests and did not provide non-sensical answers to the open-response questions), leaving a sample of 92 (65.2% female, mean age = 37.1 years old). Participants were randomly assigned to consider a recent important decision or a recent generic one.¹

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First, all participants described a recent decision (“Please think about a decision you had to make recently. In the space provided, write a brief description of this decision.”). Some participants were asked to describe an important decision (i.e., one that had a significant impact on their lives), and the rest simply described (any) recent decision.

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¹ We included this factor in our pilot survey design to show that even for relatively important decisions, consumers consider and weight time costs less than other factors. We did not pre-register nor have any expectations about differences between conditions; accordingly, our analyses focus on overall patterns.

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3 Second, all participants wrote in at least two factors they considered when making their
4 decision (“When making this decision, what factors or things did you consider?”).
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8 Third, they were shown six resource categories (i.e., monetary, time, emotional, social,
9 physical, and mental costs) and asked to allocate 100 points among them based on how important
10 each factor was in driving their decision (“Please distribute 100 among the categories below
11 based on how important they were in your decision.”).
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17 Finally, participants considered the factors they wrote in previously, and noted whether
18 each fell into any of the six resource categories (“Which of the following categories best
19 describes the factor you listed above?”). They could also list it as falling into none of the
20 categories.^{2,3}
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29 Results

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33 *Frequency.* Out of 92 total participants, most (i.e., 68, or 73.9%) did *not* mention time
34 costs as a factor in their decision. Among participants who recounted an important decision, 38
35 (out of 48) did not mention time costs; among those who recounted any recent decision, 30 (out
36 of 44) did not mention time costs.
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42 For comparison, the majority of participants (i.e., 67.4% or 62 out of 92) mentioned
43 monetary costs as a factor in their decision; 38 (out of 48) participants in the important decision
44 condition and 24 (out of 44) in the any decision condition.
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51 ² For all resource categories, participants were coded as having considered a resource cost in their decision if any of
52 the factors they mentioned belonged to that resource category. Participants whose factors didn’t belong to either the
53 time costs or monetary costs categories were coded as not having considered that resource in their decision.

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55 ³ As pre-registered, participants’ codings were manually checked by a graduate research assistant to ensure
56 consistency with our definition of time costs (i.e., the time needed to do something). All research assistants were
57 blind to the research propositions and conditions. We report the manually checked responses in the main text for
58 accuracy; raw codings showed similar patterns.
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3 Put differently, while almost 75% of participants didn't consider time costs when making
4 their decision, only about 30% didn't consider monetary costs. See Web Appendix Figure 1.
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8 *Relative importance.* In terms of relative importance, time costs were allocated an
9 average of 13.6 (out of 100 total; $SD = 14.4$) points.⁴ Notably, monetary costs were allocated
10 nearly double this amount ($M = 28.4$ points, $SD = 24.8$).⁵ See Web Appendix Figure 2.
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17 Discussion

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21 The pilot survey results show that time costs tend to be neglected when decisions are
22 made. Out of the 92 US consumers surveyed, most (i.e., 73.9%) did not mention time costs as a
23 relevant factor in a recent decision. Further, people were nearly twice as likely not to mention
24 time costs as other factors like monetary ones.
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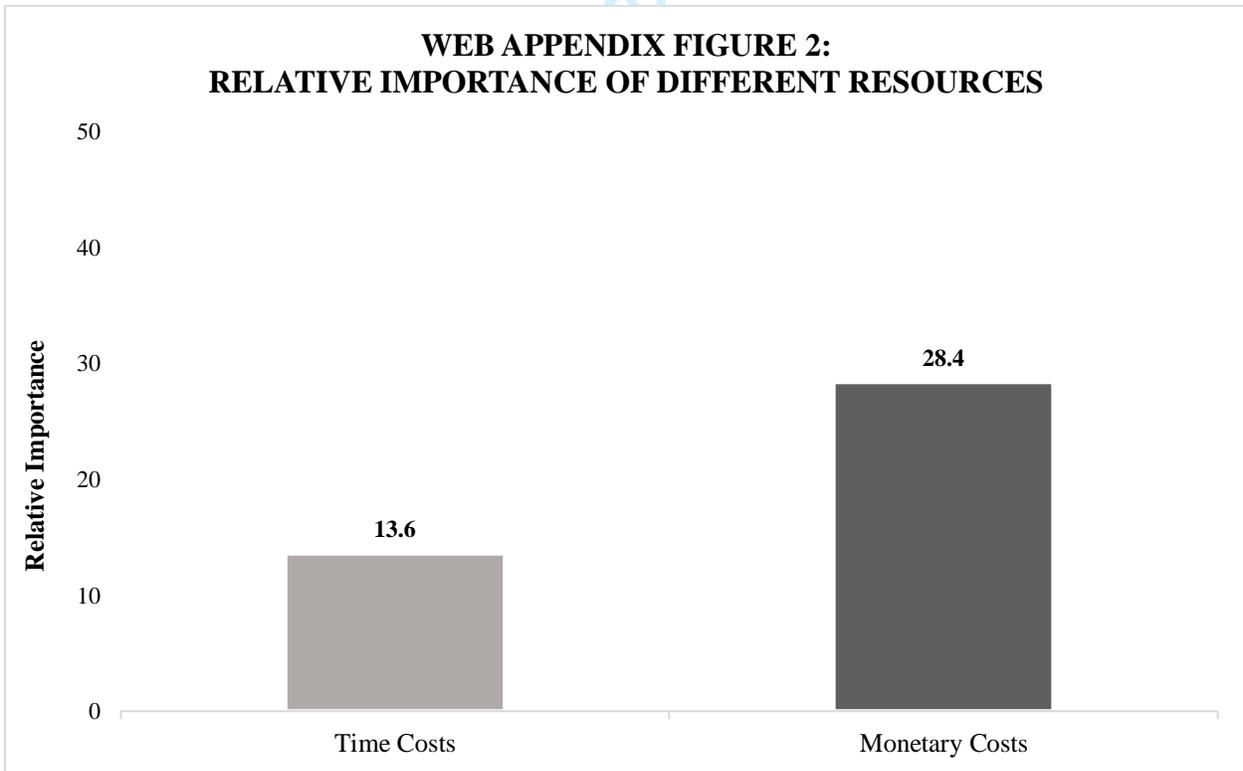
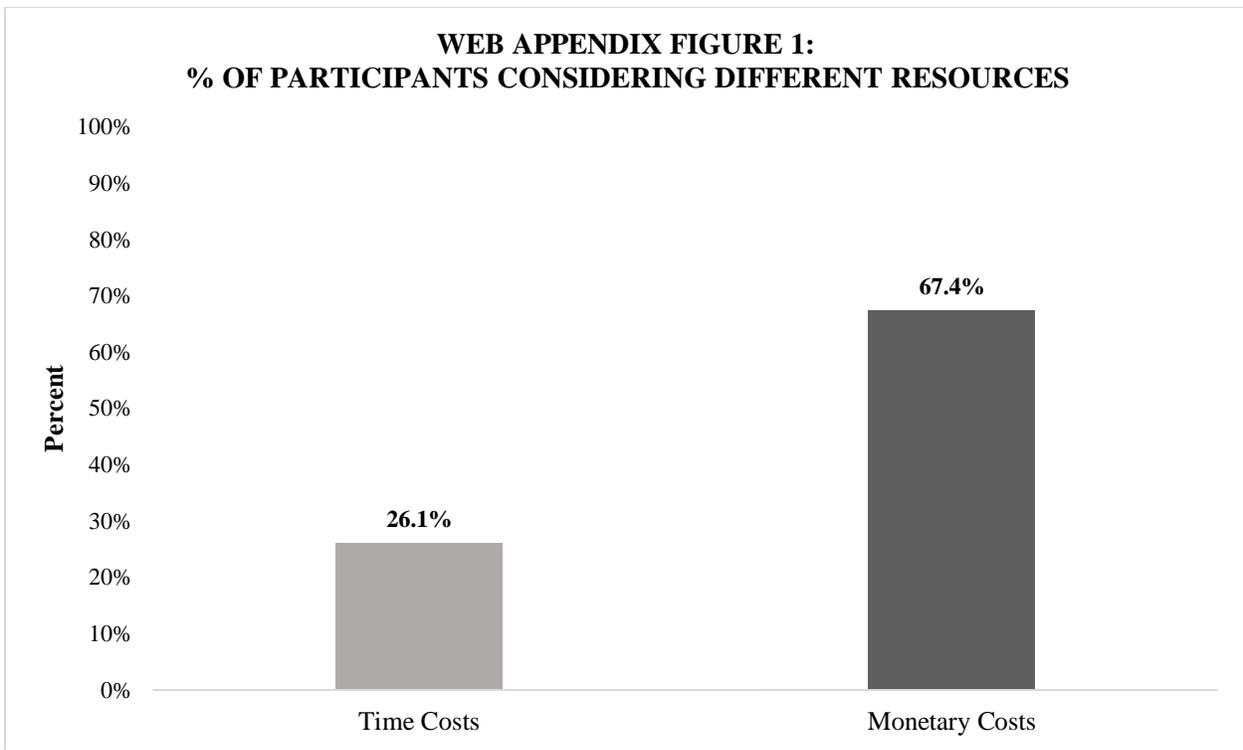
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31 Participants also reported weighting time costs less in their decisions. Compared to
32 monetary costs, time costs were rated as about half as important (i.e., received about half as
33 many points). Interestingly, this difference was even larger for more important decisions.
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37 Together, these results support our contention that time costs tend to be neglected in
38 decision making, both because they are not salient, or considered in decision making, and even
39 when they are considered, they are weighted less heavily (i.e., seen as less important).
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53 ⁴ Participants who recalled an important decision allocated time costs an average of 9.4 points ($SD = 10.5$); those
54 who recalled any recent decision allocated time costs an average of 18.1 ($SD = 16.6$).

55 ⁵ Participants who recalled an important decision allocated monetary costs an average of 26.7 points ($SD = 23.2$);
56 those who recalled any recent decision allocated monetary costs an average of 30.3 points ($SD = 26.6$).
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**WEB APPENDIX TABLE 1:
EXAMPLES OF INDIVIDUAL AND CULTURAL DIFFERENCES**

Individual /Cultural Difference	Framework Component(s)	Summary	Example
Age	Perceived time constraints	Older consumers should perceive greater time constraints. As individuals age, they tend to perceive time as passing faster (Friedman and Janssen 2010). Older consumers should also feel like they have less time ahead of them (Carsensen 1992). Both perceptions, in turn, can lead older consumers to feel like they have less time available and should thus increase time costs' salience and weight in decision making.	As consumers grow older, they may feel more time constrained and become more aware that activities they don't like (e.g., work) take time away from things they do like (e.g., hobbies, travel, or time with loved ones). Consequently, they may make decisions to shift time towards higher value opportunities (e.g., retiring sooner to prioritize spending time spent on more enjoyable activities).
	Specialness	Older consumers should perceive more moments in life as "special." As individuals age, they care more about connection and meaning (Mogilner, Kamvar, and Aker 2011) and cherish even ordinary moments (Bhattacharjee and Mogilner 2014). This perspective, in turn, should increase time costs' weight in decision making.	As consumers grow older, they may recognize the specialness of every moment shared with loved ones. Consequently, they may become more willing to invest in time-saving products or services (e.g., grocery delivery, faster commute options) to free up more time.

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Chronic Time Constraints	Perceived time constraints	Chronic time constraints should, like situational factors, increase perceived time constraints. This, in turn, should increase time costs' salience and weight in decision making.	Consumers in demanding professions (e.g., investment bankers) or who face persistent goal conflicts (e.g., parents juggling career and raising young children) may chronically feel time constrained. Consequently, they may be more aware of time costs and incorporate them more in their decisions (e.g., eating lunch at the same place every day, or the place with the fastest service, rather than one with the best food or cheapest prices).
Productivity Orientation	Alternative time uses	Chronic time constraints should, like situational factors, lead consumers to be more aware of alternative uses (e.g., opportunity costs; Spiller 2011) of their time. This, in turn, should increase time costs' salience and weight in decision making.	Chronically time-constrained consumers (e.g., parents balancing raising young children with advancing their careers) may be more likely to think about the various ways they could spend their time (e.g., with their kids, doing extra work, household chores). Consequently, they may be more aware of the time costs associated with various activities and weight these more in their decisions (e.g., invest in time-saving products and services).
Perceived time constraints	Alternative time uses	Consumers high in productivity orientation should perceive greater time constraints. Productivity-oriented consumers try to accomplish as much as they can in limited time (Keinan and Kivetz 2011), which should make their time seem more in demand. This, in turn, should increase time costs' salience and weight in decision making.	A consumer who highly values productivity may also feel more time constrained (i.e., aware of the limits of their time). Consequently, they may be more aware of time costs and purchase or use time-saving products (e.g., high-speed internet) to help them get more out of their time.
Alternative time uses	Alternative time uses	Consumers high in productivity orientation should be more likely to consider alternative uses of their time. Productivity-oriented consumers try to accomplish as much as they can in limited time (Keinan and Kivetz 2011), making potential time uses chronically more accessible. This, in turn, should increase time costs' salience and weight in decision making.	A consumer who highly values productivity may also be more aware of various uses of their time, and choose time-saving services (e.g., grocery delivery or cleaning services) so that they can get more done in the same amount of time.

	<p>Evaluation mode</p>	<p>Consumers high in productivity orientation may be more likely to evaluate time costs jointly (vs. separately). Productivity-oriented consumers try to accomplish as much as they can in limited time (Keinan and Kivetz 2011), making them more likely to evaluate a given time cost relative to others. This, in turn, should increase time costs' weight in decision making.</p>	<p>A consumer who highly values productivity may also be more likely to compare the time costs associated with different options (e.g., time spent waiting in line at store A vs. B), and incorporate this into their decisions (i.e., shop at the store with the shorter wait time).</p>
<p>Future Self-Connectedness</p>	<p>Hard to budget for</p>	<p>Consumers high in productivity orientation may find budgeting for time easier. Productivity-oriented consumers try to accomplish as much as they can in limited time (Keinan and Kivetz 2011), they be more accustomed, or practiced, at estimating time costs and more aware of interdependencies in time use across tasks. This, in turn, should increase time costs' weight in decision making.</p>	<p>A consumer who highly values productivity may be more inclined to plan and budget time so that they can get more done in the same amount of time. Consequently, they be more likely to use, or pay more for, time management apps or other subscription services that support time allocation and help people stick to these budgets.</p>
	<p>Cost Timing</p>	<p>Consumers who have a strong connection with their future selves should consider both immediate and distant time expenditures similarly. Consumers high in future self-connectedness tend to care more about their future selves (Bartels and Urminsky 2011), so may make decisions about future time costs as if they were happening in the present. This, in turn, should increase time costs' weight in decision making.</p>	<p>A consumer who has a strong connection to their future self might choose to spend more money to purchase a fast pass for an upcoming Disney trip next month, because they anticipate the discomfort of waiting in long lines and weight that time cost as if they had to pay it today.</p>
	<p>Limited consequences for overspending</p>	<p>Consumers who have a strong connection with their future selves may perceive greater consequences of overspending time. Consumers high in future self-connectedness tend to care more about their future selves</p>	<p>A consumer who has a strong connection to their future self might place greater weight on time costs in the present (e.g., choosing to take the express lane on to make sure they get to work on time) to avoid negative consequences of overspending time</p>

		<p>(Bartels and Urminsky 2011), and because the consequences over overspending time tend to be felt more in the future, they may be more sensitive to those repercussions in the present. This, in turn, should increase time costs' weight in decision making.</p>	<p>in the future (e.g., get scolded by their boss for being late).</p>
<p>Cultural Emphasis on Time</p>	<p>Related cues/ Explicit provision/ Explicit prompting</p>	<p>Consumers from more time-oriented cultures may be more attuned to time-related information. Time-oriented cultures place high value on productivity, efficiency, and punctuality (Bellezza et al. 2017), increasing sensitivity to information about time-related information. This, in turn, should increase time costs' salience and weight in decision making.</p>	<p>Consumers from time-oriented cultures may be more influenced by marketing communications related to time costs. An advertisement for a restaurant that explicitly provides time costs (e.g., "Lunch in 5 minutes or less"), for example, may have a bigger impact on driving traffic in more time-oriented cultures.</p>
	<p>Trading time for money</p>	<p>Consumers from more time-oriented cultures may perceive time as a valuable resource that is interchangeable with other resources like money (Graham 1981; DeVoe and Pfeffer 2007). This, in turn, should increase time costs' salience and weight in decision making.</p>	<p>Consumers from time-oriented cultures may be more likely to understand that time is not "free" and spend money to free up time to spend on other higher value things.</p>

**WEB APPENDIX TABLE 2:
COMPLETE LIST OF PROPOSITIONS**

RESOURCE SPECIFIC FACTORS IMPACTING SALIENCE

P1: Inherent characteristics of time (i.e., it is intangible, passively spent, naturally replenished, and informally transacted) should make time costs less salient.

P1a: Time's intangibility should make time costs less salient.

P1b: The fact that time is spent passively should make time costs less salient.

P1c: The fact that time naturally replenishes should make time costs less salient.

P1d: Time's tendency to be informally transacted should make time costs less salient.

RESOURCE SPECIFIC FACTORS IMPACTING WEIGHTING

P2: Even when time costs are salient, inherent characteristics of time (i.e., it has ambiguous value, endowed rather than earned, is hard to budget for, has limited consequences for overspending, and is perceived as more available in the future) should reduce time costs' weight in decision making.

P2a: Time's ambiguous value should reduce time costs' weight in decision making.

P2b: The fact that time is endowed (vs. earned) should reduce time costs' weight in decision making.

P2c: Challenges with time budgeting should reduce time costs' weight in decision making.

P2d: The lack of tangible consequences for overspending time should reduce time costs' weight in decision making.

P2e: That time seems more available in the future should reduce time costs' weight in decision making.

CONTEXTUAL FACTORS IMPACTING SALIENCE

P3: Contextual factors (i.e., the explicit provision of time costs and related cues) should make time costs more salient.

P3a: Explicitly providing time costs should make them more salient.

P3b: Times-related cues should make time costs more salient.

CONTEXTUAL FACTORS IMPACTING WEIGHTING

P4: Contextual factors (i.e., explicit prompting, specialness, acquisition effort, evaluation mode, cost timing, and relative magnitude) should increase time costs' weight in decision making.

P4a: Explicitly prompts or reminders to consider time costs should increase their weight in decision making.

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P4b: Time being “special” should increase time costs’ weight in decision making.

P4c: Needing to expend more effort to acquire time should increase time costs’ weight in decision making.

P4d: Joint (vs. single) evaluation should increase time costs’ weight in decision making.

P4e: Shrinking the temporal distance between decision and transaction should increase time costs’ weight in decision making.

P4f: Increasing time costs’ objective or subjective magnitude should increase their weight in decision making.

CONTEXTUAL FACTORS IMPACTING BOTH SALIENCE AND WEIGHTING

P5: Contextual factors (i.e., contexts that increase perceived time constraints, awareness of alternative time uses, or make time seem tradeable for money) should make time costs more salient and increase their weight.

P5a: Contexts that highlight time constraints should make time costs more salient and increase their weight in decision making.

P5b: Contexts that highlight alternative time uses should make time costs more salient and increase their weight in decision making.

P5c: Contexts that encourage consumers to think about trading time for money should make time costs more salient and increase their weight in decision making.

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