

# Inducing desired behavioral intentions: An experimental study on choice architectures and framings

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# **Inducing desired behavioral intentions: An experimental study on choice architectures and framings**

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## **Abstract**

**Policy makers and marketers alike try to leverage on changing choice architectures to increase compliance with a desired behavior. However, choice architectures and framings vary in their ability to induce desired behavioral intentions. In the present study, the author considers three choice architectures and three framings as instruments to induce desired behavioral intentions in a blood donation context. The author is not aware of any prior consumer study that has compared three choice architectures with one another or in the context of different framings. The study contributes to consumer research by showing that in an online-experiment active choice architectures are more effective to induce desired behavioral intentions than default-options and forced active choice architectures. Additionally, a simple “yes/no” framing as a response option yields the most behavioral intentions.**

**Keywords:** *Choice Architecture, framing, decision making*

**Track:** *Consumer Behavior*

## 1. Introduction

Marketers constantly face the challenge of asking and presenting decisions to consumers with the intent of eliciting a desired behavior, while (simultaneously) anticipating how consumers will react (Goswami & Urminsky, 2016). Marketers and policy makers alike try to leverage on changing choice architectures to increase compliance with a desired behavior. Choice architectures refer to the development of framing options “to push people toward a desired decision” (Putnam-Farr & Riis, 2016, p. 424). Their effect is apparent in a variety of domains such as organ donations (Johnson & Goldstein, 2003), retirement plans (Choi et al., 2002), sustainable behaviors (Liebig & Rommel, 2014) and charitable giving (Abadie & Gay 2006). Prior consumer research has focused on one or two choice architectures and on establishing their effect on consumer behavior respectively behavioral intentions in a variety of settings, resulting in the following research gaps. First, consumer and consumer psychology research compared only a few choice architectures simultaneously and investigated them in diverse contexts such as fitness settings (Putnam-Farr & Riis, 2016) and medication adherence (Keller et al., 2011). This fragmented approach limits the comparability of their findings. Marketers and consumer researchers would benefit from knowing how specific choice architectures differ in eliciting desired behaviors. Second, while consumer researchers have been interested in framing (language used by marketers) products to consumers (e.g., Inman, Peter, & Raghurir, 1997), research on framings in choice architectures is limited – despite knowing that responses depend heavily on the way choices are framed (Kahneman & Tversky, 1984). Extant consumer research only compared at most two framings simultaneously and more importantly only looked at framings, which include the first person. How these compare to simple “yes/no” framings is still unknown.

## 2. Choice architectures and framings

In the following, this study presents a comprehensive literature review on the most prominent choice architectures studied by consumer researchers and implemented by marketers: default-options, forced active choice architectures and active choice architectures.

*Default-options.* Defaults-options refer to options “the consumer will automatically receive, if he/she does not explicitly specify otherwise” (Brown & Krishna, 2004, p. 529). Default-options are realized through opt-in and opt-out (Johnson, Bellman & Lohse, 2002).

For example, by German law, Germany assumes that its citizens per se are not organ donors – they have to opt-in. Contrary, France assume citizens’ consent – they have to opt-out (Johnson & Goldstein, 2003). Default-options draw on individuals’ inclination to favor the status-quo (Samuelson & Zeckhauser, 1988), inertia (Madrain & Shea, 2001) and procrastination (Choi et al., 2003).

Default-options have an impact on compliance with a behavior (Putnam-Farr & Riis, 2016). Countries, in which citizens have to opt-out, have a larger organ donor pool (over 99% in France) than countries with opt-in (12% in Germany) (Johnson & Goldstein, 2003). Companies also try to leverage on this effect. Compliance with tax-favored savings plans are more successful, when employees have to opt-out than opt-in (Carroll et al., 2009).

Despite their appeal, default-options have a downside. They might be less likely to represent individuals’ true preferences, as they are assumed rather than known (Payne et al., 1992). Additionally, automatically enrolling individuals in a 401 (k) plan is not similarly suitable for all individuals (Carroll et al., 2009). Besides, some individuals might see default-options as ethically unacceptable (Keller et al., 2011).

*Forced active choice architectures.* Forced active choice architectures, also known as mandated choice, try to bypass the caveats of default-options. As Keller et al. (2011, p. 378) point out, contrary to default-options “the “forced choice” approach does not have a default; indeed, the key element of the policy is to force decision-makers to make an explicit choice.” This architecture seems to draw on consumers’ regret aversion (Keller et al., 2011).

Spital (1995) found support for implementing this choice architecture in organ donation surveys. Kessler & Roth (2014), however, did not find empirical support for this: Forced active choice architectures did not increase enrollment in organ donations. Nevertheless, forced active choice architectures prove successful in other domains, such as in medical adherence (Keller et al., 2011) and enrollment in 401 (k) plans (Carroll et al., 2009).

This architecture also has downsides, because it combines a consumer’s lack of certainty with forcing them into a decision (Dhar, 1997). Additionally, ethical concerns come into play, because using force raises the question of acceptability.

*Active choice architectures.* Active choice architectures are different from default and forced active choice architectures as they have a third option: the option to defer the decision (Putnam-Farr & Riis, 2016). Contrary to default-options, consumers make an active decision

between at least two options (Brown & Krishna, 2004). Compared to forced active choice architectures, consumers can forgo the decision (Putnam-Farr & Riis, 2016). From a marketer's perspective, active choice architectures seem to be the easiest architecture to implement, since it acknowledges their moral, ethical and legal limitations.

Empirical findings on the success of active choice architectures show mixed results. Utilizing e-mails, Cioffi & Garner (1998) asked students to respond with a simple “yes” and “no” and induced inaction (representing either “yes” or “no”) to indicate their intention to attend a mobile blood collecting drive. Individuals sent more “yes” than “no” e-mails. In a fitness context, active choice architectures compared to opt-in-options are more successful in getting consumers to click on e-mails (Putnam-Farr & Riis, 2016). In the context of sustainable behavior, researchers put stickers (indicating not wanting to receive junk mail) onto mailboxes. Respondents could decide to use them or throw them away. In active choice architectures, 16% attached the sticker to their mailbox compared to 20% in the forced active choice architecture (Liebig & Rommel, 2014). Because of the inherent third option though, a particular emphasis should be placed on framings (Putnam-Farr & Riis, 2016).

*Framings.* Framings refer to selecting “*some aspects of a perceived reality and make them more salient in a communication text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described*” (Entman, 1993, p. 52). There are two approaches, which hinge on the language used: (1) In simple framings, alternatives are neutrally worded, meaning they do not include the first-person. Generally, there are three manifestations, depending on the choice architecture: In default-options, simple framings can take the following forms: (a) in opt-in they describe the desired behavior without first-person wording (e.g., “*Place a check here to become a blood donor.*”), (b) in opt-in with emphasis they emphasize the outcome of undertaking an activity (e.g., “*Place a check here to become a blood donor. (Every donation helps to reduce the shortage of blood.)*”) (e.g., Putnam-Farr & Riis, 2016), and (c) in forced active choice and active choice architectures they simply state “yes/no”.

(2) In first-person framings, the wording includes the subject and focal activity. Manifestations in forced active and active choice architectures include (a) first-person framing, meaning that the wording contains the individual and the desired activity (e.g., “*Yes, I would like to donate my blood.*”). (b) Enhanced first-person framing is unique, because it “advantages the option preferred by the communicator by highlighting losses incumbent in

the non-preferred alternative” (e.g., “*Yes, I would like to donate my blood and help contributing to prevent shortages of blood donations.*”) (Keller et al., 2011, p. 378).

### **3. Inducing desired behavioral intentions by using choice architectures and framings**

Researchers show that in a sustainable behavior (Liebig & Rommel, 2014) and medical adherence context (Keller et al., 2011) forced active choice architectures result in more desired behavior than active choice architectures. Forced active choice architectures might be a valid way of getting “around procrastination or decision avoidance” (Keller et al., 2011, p. 382; Luce, Payne & Bettman, 1999), when it concerns decisions that consumers would have made anyways and those, which are easily reversible, such as participating in sustainable behaviors or taking their medication. However, research indicates that consumers do not want to be forced regarding other decisions, which empirical data on organ donations illustrates (Kessler & Roth, 2014). Consumers seem to reject the notion of force, whenever they anticipate potential negative consequences and may feel uncomfortable about making decisions, which are not easily reversible (Goldstein et al., 2008). By removing, the aspect of force in active choice architectures and default-options, it should alleviate the notion of rejection and consumers should state more behavioral intentions (e.g., Cioffi & Garner, 1998) than in forced active choice architectures, concerning not easily reversible decision such as organ or blood donations. Previous research shows that active choice architectures results in more behavioral intentions than default-options (e.g., Putnam-Farr & Riis, 2016).

*H1a: Default-options results in less stated behavioral intentions than active choice architectures.*

*H1b: Forced active choice architecture results in less stated behavioral intentions than default-options.*

*H1c: Forced active choice architecture results in less stated behavioral intentions than active choice architectures.*

Scant active choice architecture research has not systematically varied framings, instead separately used either simple framings (Cioffi & Garner, 1998) or first-person framings (Putnam-Farr & Riis, 2016). Cioffi & Garner (1998) relied on simple framings to induce blood donations. Putnam-Farr & Riis (2016) show that using first-person framings is more successful in inducing behaviors compared to opt-in, while enhanced first-person framings are even more successful. However, this is the first study to compare simple framings with first-person and enhanced first-person framings.

The underlying assumption is that first-person framings increase the likelihood of consumers visualizing themselves doing this activity (Putnam-Farr & Riis, 2016). Research shows that first-person framings result in a higher likelihood of consumers stating their behavioral intentions (Rennie, Harris & Webb, 2014) and engagement in a behavior (Paivio, Walsh & Bons, 1994). Not adopting a first-person language can lead to consumers feeling that the activity is distant and create feelings of disengagement (e.g., McIsaac & Eich, 2002).

Additionally, enhanced first-person framings remind consumers of the consequences of their (non)behavior. By referring to the consequences, consumers should respond more with stated intentions than in first-person and simple framings. Research shows that when the costs of a (non)behavior is included, intentions are higher (e.g., Ganzach & Karashi, 1995).

*H2a: Compared to simple framings, first-person framings lead to more behavioral intentions.*

*H2b: Compared to simple framings, enhanced first-person framings lead to more behavioral intentions.*

*H2c: Compared to first-person framings, enhanced first-persons framings lead to more behavioral intentions.*

#### **4. Empirical study**

*Design.* A vignette describing a mobile blood collecting drive was used as a stimulus in every experimental condition. The vignette asked participants to imagine that they go about their daily lives. Posters and flyers make them aware that a mobile blood collecting drive will be held next month. Moreover, the vignette states that the mobile blood collecting drive is very important, because of shortages in the blood supply. Everyone is invited, who is generally able to donate blood. The vignette closes with a sentence, mentioning that the blood center needs to know how many people will attend this mobile blood collecting drive, to plan the staff and equipment accordingly.

*Sample.* The sample consists of  $N = 666$ , which were randomly assigned to one of the experimental conditions. Each experimental condition was filled with roughly  $n = 110$  participants. During the data collection, the author ensured that the sample was representative for the German population with respect to age and gender.

*Measurement of choice architectures and framings.* (1) In default-options (a) opt-in is phrased “Please place a check in the box if you want to donate blood in the mobile blood

*collecting drive.*” (based on Keller et al., 2011), and (b) the opt-in with emphasis condition is phrased “*Please place a check in the box if you want to donate blood in the mobile blood collecting drive. Every donation helps to reduce the shortage of blood.*” (based on Putnam-Farr & Riis, 2016). (2) The forced active choice condition uses first-person framings: “*Yes, I would like to donate blood during the next mobile blood collecting drive*” vs. “*No, I do not want to donate blood during the next mobile blood collecting drive.*” (based on Keller et al., 2011). (3) In the active choice architecture, (a) simple framings utilized “*yes/no/no information*” (based on Cioffi & Garner, 1998). (b) First-person framings are the same as in the forced active choice condition, except that a third option of “*no information*” is included. (c) Enhanced first-person framings read: “*Yes, I would like to donate blood during the next mobile blood collecting drive and help contributing to lowering the shortages of blood.*” and “*No, I do not want to donate blood during the next mobile blood collecting drive and help to contributing lowering the shortages of blood.*”

*Dependent variable.* The behavioral intention to donate blood serves as the key dependent variable, measured as “*yes*” and “*no*”.

*Controls.* To ensure that the findings are robust, the author checks for possible confounds. Perceived realism is measured using three items (e.g., “*I think the situation described could also happen in real life*”). Cronbach’s  $\alpha = .905$  shows a very high consistency. Imagination into the vignette is measured using two items (e.g., “*I was able to put myself in the situation described*”). These items also show high reliability with Cronbach’s  $\alpha = .948$ . Comparison between experimental conditions show no significant differences,  $F_{\text{perceived realism}}(5, 660) = .496, p = .780$ ;  $F_{\text{imagination into vignette}}(5, 660) = .333, p = .893$ . The means for perceived realism ( $M_{\text{perceived realism}} = 5.78$ ;  $SD_{\text{perceived realism}} = 1.268$ ) and imagination into the vignette were rather high ( $M_{\text{imagination}} = 5.74$ ;  $SD_{\text{imagination}} = 1.415$ ).

*Results.* First, the author looked at the frequencies of stated behavioral intention to donate blood within each of the three choice architecture conditions. The results showed stated behavioral intentions of participants to the amount of 59.6% for the active choice architecture group (combining the three framings), of 58.9% for the default-option group (opt-in and opt-in with emphasis), and of 46.9% in the forced active choice architecture group. There was a marginal significant association between the type of choice architecture and whether or not participants stated a behavioral intention,  $\chi^2(2) = 5.895, p = .052$ . Results from a z-test revealed that the proportion of stated behavioral intentions was not significantly different



between the active choice architecture and default-option group. Hence, H1a is rejected. In confirming H1b, forced active choice leads to significantly less stated behavioral intentions than default-options. The active choice architecture also leads to significantly more stated behavioral intentions than forced active choice architecture, confirming H1c.

Second, the author looked at the frequencies of stated behavioral intentions within each of the three framing conditions in active choice architectures. The results showed stated behavioral intentions of participants to the amount of 67.0% in the simple framing group, of 60.2% in the enhanced first-person group, and of 51.5% in the first-person framing group. There was a marginally significant association between framings and whether or not participants stated a behavioral intention,  $\chi^2(2) = 5.251, p = .072$ . Results from a z-test revealed that the proportion of stated behavioral intentions was significantly different between simple framing and first-person framing (rejecting H2a). There was not a significant difference between simple framing and enhanced first-person framing (rejecting H2b). In rejecting H2c, there was no significant difference between the first- and enhanced first-person framing. Checking for confounding variables, a logistic regression analysis revealed that social desirability and reactance do not confound the results.

Third, the author looked at the frequencies of stated behavioral intentions across all three choice architectures and three framings. The results show stated behavioral intentions to the amount of 67.0% for simple framings, 60.2% for opt-in with emphasis, 57.7% for opt-in, 60.2% for enhanced first-person framings, 51.5% for first-person framings, and 46.9% for forced active choice architectures. There was a significant association between the type of choice architecture and participants stated behavioral intentions,  $\chi^2(5) = 38.365, p < .001$ . Results from a z-test revealed that the proportion of stated behavioral intentions was significantly different between simple framing and forced active choice and first-person framing, with simple framing yielding more behavioral intentions. Forced active choice architecture results in less stated behavioral intentions than opt-in with emphasis.

## 5. Conclusion

The present study is the first to compare three choice architectures and framings in the same context. The investigation of the first hypothesis shows that while the difference between default-options and active choice is not significant, both groups are significantly

different to forced active choice architectures. If these results are transferable to other decision making contexts, marketers should refrain from using forced active choice architectures and instead rely on active choice architectures. This is in line with previous research showing consumers do not like to be forced in health-related settings, particularly when stating behavioral intentions (Kessler & Roth 2014). With regard to hypothesis 2, the results indicate that simple framing leads to the most stated behavioral intentions compared with first-person and enhanced first-person framings. While the consensus in previous consumer psychology research (e.g., Keller et al., 2011) seems to be that only framings that are more complex induce desired behaviors, research did not compare those with simple framings. This study shows that framings do not need to be complex to induce desired behavioral intentions.

The limitations of this study present opportunities for future research. While this study is the first to compare three choice architectures in one setting, blood donations might be a particular one, limiting generalizations. However, previous consumer psychology literature investigated choice architectures in similar contexts (e.g., Keller et al., 2011). Future research would also benefit from field experiments to analyze actual behavior, instead of intentions.

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