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An Experiment with Self-Commitment Power

by

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Abstract

Loewenstein (1996, 2005) identifies an intrapersonal empathy gap. In the respective experiments, subjects make choices with delayed consequences. When entering the state where these consequences would unfold, they get the possibility to revise their initial choice. Revisions are more substantial when these two choices are made in different emotional states. The concept of the empathy gap suggests that the initial choice represents a misprediction of future preferences. However, it might alternatively be based on a well understood disagreement with future preferences. In this sense, people would like to add: "But don't ask me again!" To disentangle both explanations, we induce two different emotional states in each subject and offer a self-commitment device in the first state. In one condition, subjects move from a "cold" state of reflection to a "hot" state of impulsiveness. In the other condition, this order is reversed. We find evidence for the hot-to-cold empathy gap, but not for the cold-to-hot empathy gap when subjects can self-commit to their initial choice.

Keywords: Intrapersonal empathy gap, self-commitment, intrapersonal conflict, naïveté, sophistication

JEL-Classification: D03, C90

1   Introduction

The intrapersonal empathy gap describes the inability to put oneself in the shoes of one's later alter ego in a different emotional state. Usually, "hot" and "cold" states are distinguished. Hot states like hunger, fear, arousal, or fatigue, are defined by the presence of elevated visceral factors while cold states are defined by their absence (Loewenstein 1996). Loewenstein (1996, 2005) distinguishes between a "cold-to-hot" and a "hot-to-cold empathy gap". The former describes people's inability in cold states to foresee how they will react in the "heat of the moment". The latter describes people's inability to anticipate how transient their current hot desires are. The concept of self-commitment, on the other hand, crucially depends on the ability to anticipate one's future deviation from today's optimal plan (see, e.g., Strotz 1956 or O'Donoghue and Rabin 2001). Soman et al. (2005, p. 352) note that one should be cautious with assuming this kind of "sophistication" (Hammond 1976), because it is inconsistent with findings on consumer misprediction and the intrapersonal empathy gap. In our opinion, this argument can be reversed: one should be cautious with the assumption that people naively mispredict, because it is inconsistent with the evidence on sophisticated self-commitment (see, e.g., Ariely and Wertenbroch 2002, Ashraf et al. 2006, DellaVigna and Malmendier 2006, Casari 2009, or Uhl 2010).

In an experiment with smokers, Sayette et al. (2008) elicited participants' preferences for smoking in two different emotional states. In the first session, all participants had to state their minimum compensation for postponing smoking in a second session which took place several days later. They were informed that they would be in a hot state of high craving in the second session. Experimenters would make sure that they were nicotine deprived for at least twelve hours. Additionally, they would be exposed to the stimulus of a burning cigarette. For the first session, participants arrived in two conditions to which they had been randomly assigned. They were either also in a hot state, nicotine deprived for at least twelve hours, or in a cold state, having smoked as usual. Participants in the hot state submitted higher minimum compensations to postpone smoking in the second session than those in the cold state. In the second session, participants got the surprising possibility to revise their initially stated minimum compensation for postponing smoking (Sayette et al. 2008, p. 929). Those who had submitted their initial minimum compensation in an emotionally different cold state of low craving raised it significantly more than those who had stated it in a hot state of high craving. The authors interpret the fact that the initial choice in one emotional state is systematically different from the revised choice in another emotional state as a misprediction, an inability to anticipate a later self's different needs: "[A]s predicted, in contrast to smokers in the hot group, smokers in the cold group underpredicted the value they

would place on smoking during the second session" (Sayette et al. 2008, p. 926).

Read and van Leeuwen (1998) let participants choose between a healthy and an unhealthy snack. One group of participants was told that the experimenters would come back the next day in the late afternoon and provide them with what they had chosen. Part of this group made the initial choice in the late afternoon when hungry while the other part made it immediately after lunch when satisfied. The following late afternoon, when participants arrived to collect their snacks, the experimenters pretended that they had no record of participants past choices and encouraged them to choose whatever they wanted. Participants who had made their initial choice in a satisfied state changed significantly more often to an unhealthy snack than those who had made their initial choice in a hungry state. According to Read and van Leeuwen (1998, p. 191), "[t]he intrapersonal empathy gap is measured by taking the difference between advance choices made in the same state of appetite in which a snack will be consumed and those made in a different state". The authors are aware of the ambiguity we address in this study. At the end, they discuss the problem of disentangling an inability to predict future wants, a true empathy gap, with the attempt to impose a "better judgment" of advance choices on a future self (Read and van Leeuwen 1998, p. 201).

If participants' current choices unfold delayed consequences, the prediction of future tastes is crucial. However, the mere divergence of preferences between different emotional states need not mean that participants mispredict. The preference divergence may be a well understood disagreement of a decision maker in one state with her own preferences in a different state. In particular, if the possibility to revise an earlier choice comes to participants as a surprise, it is not clear how to interpret the earlier choice. In the discussed experiments, it is difficult to assess whether participants' initial choice was a naive plan or a sophisticated self-commitment which only turned out to be ineffective because the experimenters did not enforce it. Experimenters did not ask participants: "Shall we ask you again later?" Assume that we hear Ulysses's plan to sail past the sirens, but then observe that he obeys their voices and jumps over board. Only the availability of the mast allows to understand whether he fatally underestimated his future desire or whether he found nothing to tie himself to. The aim of this experiment is to disentangle both explanations. In contrast to previous studies on the intrapersonal empathy gap, we put a mast in the middle of the ship. Choices in two different emotional states are elicited and the possibility to revise in the second state is announced in the first state. Participants are then offered a salient self-commitment device. We are interested in whether the empathy gap persists in the presence of this device. A symmetric design, where participants either get the chance to self-commit to their cold choice or to their hot choice, allows us to test for both variants of the intrapersonal empathy gap.

2 Experimental Design

The experiment consisted of two online sessions and one final laboratory session. In the invitation, participants were informed about this fact and that they should have internet access at home if they wanted to participate. Additionally, they were told that the sessions would take place on three consecutive Tuesdays or Wednesdays, respectively. The online sessions took just a few minutes and the final laboratory session was only needed to provide payments. Each session was conducted in a strictly limited time frame which participants did not know before registration. They were therefore asked to register only if they had no important appointments before noon on the days of the three sessions.

2.1 Cold-to-Hot and Hot-to-Cold Condition

One day after the end of the registration period, participants received an e-mail in which they were informed about the time frame of the first online session. Participants were randomly assigned to a "Cold-to-Hot" or a "Hot-to-Cold Condition" with equal probabilities. To induce emotionally different states, we exploited the natural presence or absence of fatigue at different times of the day. We use the terms "cold" and "hot" to distinguish between a situation in which participants were presumably well rested and one in which they were presumably sleepy. In both states, they made a choice with delayed consequences for which their state of fatigue should have mattered. This choice was about how early to show up to the final laboratory session to collect their participation fee.

Participants assigned to the Cold-to-Hot Condition had to log in to the first online session between 10.30 and 11.00 a.m. Those assigned to the Hot-to-Cold Condition had to log in to the first online session between 5.30 and 6.00 a.m. For the second online session, time frames of the two conditions were switched (see Table 1). Those who were participating in the first online session between 10.30 and 11.00 a.m. had to log in to the second online session between 5.30 and 6.00 a.m. Accordingly, those who were participating in the first online session between 5.30 and 6.00 a.m. had to log in to the second online session between 10.30 and 11.00 a.m. However, participants did not learn about the exact time frame of the second online session before the first online session.

Table 1: Cold-to-Hot and Hot-to-Cold Condition

Condition	1st Online Session	2nd Online Session
Cold-to-Hot	10.30 to 11.00 a.m.	5.30 to 6.00 a.m.
Hot-to-Cold	5.30 to 6.00 a.m.	10.30 to 11.00 a.m.

Participants were sensitized that each link was only active during the 30 minutes

of the respective time frame. It was emphasized that participation in both online sessions and personal attendance at the laboratory session was necessary to be eligible for payment. Participants were informed that an individualized web link to access the first online session would be send to them on the day before the first online session by 2 p.m. Along with the link they received a reminder of the time frame in which it was active.

2.2   The Self-Commitment Possibility

In the first online session, participants were instructed that payments for participation in the online experiment could be collected on the day of the final laboratory session from 6.00 to 9.00 a.m. This three hours time frame was divided into twelve smaller time slots of 15 minutes each. The payment for participation depended on the time slot in which participants showed up for the final laboratory session to collect it. Payments were linearly decreasing as time slots got later (this procedure is similar to Uhl 2010). Participants were instructed that they had to choose the time in which they wanted to show up for the final laboratory session already in the online sessions. If they showed up earlier than to the chosen time slot, they had to wait until its start time. If they showed up later than its end time, they did not receive any payment. For now, participants were only presented the list of time slots in which they could show up (see Table 2). When participants pressed "Continue", they saw the next screen.

Table 2: Time Payment Scheme

Time Slot	Earliest Arrival (a.m.)	Latest Arrival (a.m.)	Payment (€)
1	6.00	6.15	16.90
2	6.15	6.30	16.10
3	6.30	6.45	15.30
4	6.45	7.00	14.50
5	7.00	7.15	13.70
6	7.15	7.30	12.90
7	7.30	7.45	12.10
8	7.45	8.00	11.30
9	8.00	8.15	10.50
10	8.15	8.30	9.70
11	8.30	8.45	8.90
12	8.45	9.00	8.10

Participants were told that they would have to choose the time slot in which they wanted to show up for the final laboratory session soon. Before that, they were

informed about the time frame in which they had to log in to the second online session (see Table 1).

Furthermore, participants were precisely instructed about the second online session in which they were asked to remake their time slot choice. Available time slots and payments in the second online session were identical to the ones in the first online session. In the second online session, they could choose any new time slot including the one, of course, which they would soon choose in this first online session. At the end of the second online session, one of the two time slot choices, which could but need not coincide, would then be randomly drawn to be relevant for them. They would then be instantly informed about the result of the random draw. Therefore, it was now clear to participants that the second online session took place at a substantially different time of day at which they had the possibility to revise their initial choice. Thus, in both conditions they had the chance to anticipate that their revised choice could be "biased" from the emotional perspective that they were currently in.

The first choice that participants made concerned the probabilities with which the random draw between their two time slot choices was finally made. To make the probability weighting of the random draw easily accessible to participants, we described their two alternatives with the help of a virtual urn with ten balls whose composition they could determine. Participants could choose between the two following alternatives.[1]

1. **Self-Liberation.** 2 balls represent your choice of today while 8 balls represent the choice which you will make in the second online session.

2. **Self-Commitment.** 8 balls represent your choice of today while 2 balls represent the choice which you will make in the second online session.

The first alternative gave a substantially higher weight to the choice made in the second online session. Note that this second online session was one week closer to the point in time where the real effort of getting up had to be performed. In an uncertain world without intrapersonal conflict, this is the more desirable option since it allows to account for more recent information. We label this option "self-liberation". It is the natural choice for participants who (for right or wrong) do not anticipate systematically deviant future preferences. Conversely, the second alternative gave a substantially higher weight to the choice made in the first online session. Since this option promotes the initial choice at the cost of being less able to react to new information, we label it "self-commitment". It should have been the natural choice for participants who primarily fear their future preferences. If the first-moving self fears that the second-moving self will state a biased deviant

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[1]The labels we introduce here were not used in the experiment.

preference, it will want to marginalize the second-moving self's choice. Therefore, by choosing one of the two alternatives in the first online session, participants self-selected into groups of "self-liberators" and "self-committers".

2.3   Time Slot Choices

After choosing one of the alternatives and clicking "Continue", the list with the twelve time slots was presented again (see Table 2). Now, participants had to choose one of them by marking the respective line and press "Continue". This was their first time slot choice. After that, the first online session was finished. Participants were informed that they would receive the link for the second online session on its eve before 2 p.m. along with a reminder of the time frame in which it would be active.

In the second online session, one week after the first one, the list of time slots (see Table 2) was presented again and participants remade their time slot choice. They were, however, not reminded of their first time slot choice. After clicking "Continue", they were informed about the result of the random draw which was performed according to their self-liberation or self-commitment choice. They then learned about the consequences of the random draw for the laboratory session, i.e., in which time slot and for what payment they had to show up. Finally, they were reminded to bring their ID to the final laboratory session. One day prior to the laboratory session, they received a reminder per e-mail which restated the consequences of the result of their random draw.

In the final laboratory session, one week after the second online session, we used a radio controlled clock to measure participants' crossing of the threshold to the laboratory. Participants then had to present their ID and it was checked whether they had arrived to the correct time slot. If they came earlier than the start time of the correct time slot, they had to wait. If they came later than its end time, they did not receive anything. Otherwise, they received their payment.

3   Hypotheses

We expect a higher dropout rate in the Hot-to-Cold Condition than in the Cold-to-Hot Condition. This is because participants got to know about the unpleasant hot session at different stages of the experiment. Participants in the Cold-to-Hot Condition only received the information about the hot session in their first online session. In contrast to that, participants in the Hot-to-Cold Condition were informed about the hot session already after the end of the registration period. This means they were informed before having taken part in the first online session. It is therefore plausible to assume that more participants in the Hot-to-Cold Condition

will drop out. The perceived costs of a dropout are lower for participants in the Hot-to-Cold Condition since they have not already invested in the experiment and did not already participate in one online session. Dropouts do not happen randomly but represent a self-selection: by trend, participants who are more averse to waking up early will be more likely to drop out. This non-random dropout implies that time slot choices are hardly comparable between the two conditions.

3.1 Main Hypotheses

The following hypotheses test for the existence of the cold-to-hot and the hot-to-cold empathy gap when self-commitment devices are saliently available. First of all, it is reasonable to assume that time slots chosen in the cold state will be earlier than those chosen in the hot state. Participants in a hot state of fatigue should give more weight to sleep relative to money than well rested participants in a cold state. In this sense, the former are more empathic with their later alter ego who actually has to get up for the final laboratory session. In our design, participants chose to be either self-liberators or self-committers. We check whether self-liberators, i.e., participants who did not choose to self-commit to their initial choice, show a systematic divergence between cold and hot choices. If this is the case, we identify an intrapersonal empathy gap even in the presence of self-commitment devices.

Cold-to-Hot Empathy Gap Hypothesis: *In the Cold-to-Hot Condition, self-liberators' first time slot choices are more ambitious than their second time slot choices.*

Hot-to-Cold Empathy Gap Hypothesis: *In the Hot-to-Cold Condition, self-liberators' first time slot choices are less ambitious than their second time slot choices.*

Our first hypothesis applies to the Cold-to-Hot Condition in which participants make their first choice between 10.30 and 11.00 a.m. and their second choice between 5.30 and 6.00 a.m. Therefore, participants make a cold choice in their first online session and are informed that they will make a hot choice in the second online session. After being informed, they get a self-commitment device at hand. If they anticipate systematically later time slot choices in the upcoming second online session, they may use this device. Assume that those who did not use it, i.e. self-liberators, choose systematically earlier time slots in the cold than in the hot state. We then find support for the interpretation that these participants systematically mispredict their change of preferences from the cold to the hot state.

The second hypothesis is on the Hot-to-Cold Condition and mirror-imaged to

the first one. Participants in this condition make their first choice between 5.30 and 6.00 a.m. and their second choice between 10.30 and 11.00 a.m. Here, participants make a hot choice in their first online session and are informed that they will make a cold choice in the second online session. Analogously to the Cold-to-Hot Condition, if participants in the hot state anticipate systematically earlier cold time slot choices, they may use a self-commitment device. Assume that self-liberators choose systematically later time slots in the hot than in the cold state. This supports the interpretation that these participants systematically mispredict their change of preferences from the hot to the cold state.

3.2   Ancillary Hypotheses

If the empathy gap hypotheses find no support, we have to check whether our manipulation worked at all and whether the self-liberation and self-commitment alternatives were actually understood. Therefore, we check whether choices of self-liberators and self-committers differ in a plausible way. If this is the case, it supports the idea that participants do not primarily choose self-commitment or self-liberation because they are confused but interpret both alternatives meaningfully.

Ancillary Cold-to-Hot Hypothesis 1: *If the cold-to-hot empathy gap hypothesis finds no support, self-committers' first time slot choices are more ambitious than their second time slot choices.*

Ancillary Hot-to-Cold Hypothesis 1: *If the hot-to-cold empathy gap hypothesis finds no support, self-committers' first time slot choices are less ambitious than their second time slot choices.*

These ancillary hypotheses capture the idea that participants who show a systematic divergence between cold and hot choices anticipate this behavioral pattern and self-select into the group of self-committers. Here, the self-commitment device works extrinsically: the first-moving self marginalizes the anticipated deviant choice of the second-moving self which is in an emotionally different state. If we also do not find such a choice divergence for self-committers, we test whether self-commitment devices may work intrinsically.

Ancillary Cold-to-Hot Hypothesis 2: *If participants' time slot choices are consistent in the Cold-to-Hot Condition, self-committers' first time slot choices are more ambitious than self-liberators' first time slot choices.*

Ancillary Hot-to-Cold Hypothesis 2: *If participants' time slot choices are*

consistent in the Hot-to-Cold Condition, self-committers' first time slot choices are less ambitious than self-liberators' first time slot choices.

If choices are consistent, we should identify systematically different ambitions between self-liberators' and self-committers' plans. As the possibility to revise the initial choice does not come as a surprise in this experiment, participants may also achieve consistency via internal self-commitment, for instance, by making a resolution. Choosing self-commitment may have a self-fulfilling effect and therefore suffice to achieve choice consistency. In this sense, it may work intrinsically. In this case, second time slot choices will not deviate systematically from first time slot choices. If participants' time slot choices are consistent, we compare self-committers' plans, i.e., their first time slot choices, with those of self-liberators. In the Cold-to-Hot Condition, self-committers' plans should be more ambitious than self-liberators'. Participants should be more likely to self-commit to relatively ambitious plans favoring more money which are more easily spoiled by a "sleepy self". Vice versa, in the Hot-to-Cold Condition, self-committers' plans should be less ambitious than self-liberators'. Participants should be more likely to self-commit to relatively unambitious plans favoring the need to sleep which are more easily spoiled by a "greedy self".

4   Results

The experiment was conducted in January and February 2011. We invited 170 students from various disciplines of the Friedrich Schiller University in Jena, Germany. The online surveys were created with the open source application LimeSurvey, and participants were recruited with the ORSEE software (Greiner 2004).

Eighty-five participants were assigned to the Cold-to-Hot Condition while another 85 were assigned to the Hot-to-Cold Condition. In the Cold-to-Hot Condition, 7 out of 85 participants (8.2 %) dropped out before the first online session, and a total of 20 out of 85 participants (23.5 %) dropped out before the final laboratory session. In the Hot-to-Cold Condition, 26 out of 85 participants (30.6 %) dropped out before the first online session, and a total of 35 out of 85 participants (41.2 %) dropped out before the final laboratory session. Table 3 presents an overview of total dropouts in both conditions. A comparison shows that dropouts were actually substantially higher in the Hot-to-Cold Condition.

In the Cold-to-Hot Condition, 31 out of the 65 participants (47.7 %) who participated in both online sessions chose the self-liberation alternative. The remaining 34 out of 65 participants (52.3 %) chose the self-commitment alternative. In the Hot-to-Cold Condition, 19 out of the 50 participants (38.0 %) who participated in

Table 3: Total Dropouts

	Cold-to-Hot	Hot-to-Cold
Finished	65 (76.5 %)	50 (58.8 %)
Dropouts	20 (23.5 %)	35 (41.2 %)
All	85 (100.0 %)	85 (100.0 %)

both online sessions chose self-liberation. The remaining 31 out of 50 (62.0 %) chose self-commitment. The fraction of self-committers is therewith relatively high compared to other experiments with self-commitment options, in which experimenters identified about one third of participants as self-committers (see, e.g., Ashraf et al. 2006, Casari 2009, or Uhl 2010). Table 4 presents an overview of self-liberation and self-commitment choices in both conditions.

Table 4: Self-Liberation and Self-Commitment Choices

	Cold-to-Hot	Hot-to-Cold
Self-Commitment	34 (52.3 %)	31 (62.0 %)
Self-Liberation	31 (47.7 %)	19 (38.0 %)
All	65 (100.0 %)	50 (100.0 %)

In the following, we compare time slot choices made in cold states and in hot states. Each choice is indexed by an integer from 1 to 12. Higher indexes mean later time slots (see Table 2).

We first turn our attention to the Cold-to-Hot Condition. According to one-sided Wilcoxon signed rank tests, we cannot refute the null hypothesis that there is no difference between self-liberators' cold and hot time slot indexes ($W = 28.5$, $p = 0.361$) (see Table 5). This means that self-liberators' do not tend to choose earlier time slots in the cold than in the hot state. Accordingly, self-liberators' cold time slot choices are not more ambitious than their hot ones. The Cold-to-Hot Empathy Gap Hypothesis is therefore not supported.

Table 5: Cold-to-Hot Condition: Self-Liberators' Cold vs. Hot Choices

	Mean	Median	Std.Dev.	
Cold	2.77	1.00	2.60	$W = 28.5$ $p = 0.361$
Hot	2.80	1.00	2.58	

We now turn our attention to the Hot-to-Cold Condition. One-sided Wilcoxon signed rank tests find a significant positive difference in self-liberators hot and cold time slot indexes ($W = 10.0$, $p = 0.0445$) (see Table 6). This means that self-liberators' tend to choose later time slots in hot than in cold states. Accordingly,

11

self-liberators' hot time slot choices are less ambitious than their cold time slot choices. We find therefore support for the Hot-to-Cold Empathy Gap Hypothesis.

Table 6: Hot-to-Cold Condition: Self-Liberators' Hot vs. Cold Choices

	Mean	Median	Std.Dev.	
Hot	2.37	1.00	2.56	$W = 10.0$ $p = 0.0445$
Cold	1.84	1.00	1.83	

Since we did not find support for the Cold-to-Hot Empathy Gap Hypothesis, we check for differences in self-liberators' and self-committers' time slot choices to make sure that participants were not confused by these alternatives.

We first check whether self-committers, in contrast to self-liberators, exhibit a systematic divergence between cold and hot time slot choices. According to one-sided Wilcoxon signed rank tests, the null hypothesis that there is no difference between cold and hot time slot indexes cannot be refuted ($W = 18.0$, $p = 0.304$) (see Table 7). This means that self-committers' tend not to choose earlier time slots in the cold than in the hot state. Accordingly, self-committers' cold time slot choices are not more ambitious than their hot time slot choices. Thus, we do not find support for Ancillary Cold-to-Hot Hypothesis 1.

Table 7: Cold-to-Hot Condition: Self-Committers' Cold vs. Hot Choices

	Mean	Median	Std.Dev.	
Cold	1.82	1.00	1.64	$W = 18.0$ $p = 0.304$
Hot	1.91	1.00	1.53	

Since self-committers and self-liberators chose consistently in the Cold-to-Hot Condition, we check whether self-committers were significantly more ambitious in their plans of how early to get up. For this purpose, we compare the first time slot choices of both groups. One-sided Mann-Whitney U-tests find a significant negative difference between self-committers' and self-liberators' first time slot indexes ($U = 636.5$, $p = 0.0467$) (see Table 8). This means that self-committers' tend to choose earlier first time slots in the cold state than self-liberators. Accordingly, self-committers tend to make more ambitious plans than self-liberators in the Cold-to-Hot Condition. We therefore find support for Ancillary Cold-to-Hot Hypothesis 2.

5   Conclusion

We investigate the persistence of the cold-to-hot and the hot-to-cold empathy gap in a framework where self-commitment devices were saliently available. In two mirror-

Table 8: Cold-to-Hot Condition: Self-Committers' vs. Self-Liberators' Choices

	Mean	Median	Std.Dev.		
Self-Committers	1.82	1.00	1.64	$U = 636.5$	$p = 0.0467$
Self-Liberators	2.77	1.00	2.60		

imaged conditions, we induced intrapersonal conflict in participants. Half of them were first put in a cold state and subsequently in a hot state while the other half entered states in the reversed order. Participants were informed about the exact course of the experiment and could therefore anticipate their deviant behavior in an upcoming different emotional state. Each participant got the possibility to self-commit to her initial choice in the first state.

We find evidence for the persistence of the hot-to-cold empathy gap when self-commitment devices are available. When offered a self-commitment device, a substantial fraction of participants in both conditions does not use it. When moving from the hot to the cold state, these self-liberators exhibit a systematic divergence of preferences about how early to show up to the laboratory session in the predicted direction.

When moving from the cold to the hot state, self-liberators' choices about how early to show up are consistent across states. Thus, no cold-to-hot empathy gap can be identified. To understand whether participants anticipated potential intrapersonal conflict in the Cold-to-Hot Condition at all, we checked for differences in self-committers' and self-liberators' first time slot choices to compare the ambition of their plans. We find that self-committers choose significantly earlier first time slots than self-liberators. This supports the idea that self-committers, although they achieved choice consistency on their own, took actions to make sure that their relatively ambitious plans were not spoiled by a "sleepy self". Accordingly, we find support for the idea that participants anticipated potential weakness of will and intentionally self-selected into the group of self-committers.

Schelling (1984) was worried about the problem of the "authentic self". He feared that it would be difficult in many situations of intrapersonal conflict to identify the true or legitimate preferences of a person. The authentic self is the self that we, as friends or benevolent politicians, should side with if we realize that a person's preferences in different states are mutually exclusive (see also Read 2006). In a review of Schelling, Elster (1985, p. 92) argues that the self which is able to act strategically in that it binds its later ego is the authentic self: "I deny that there are real-life examples of two selves - the self who wants to stay drunk and the self who wants to stay sober - engaging in mutual strategic interaction. The sober self tries to hide the bottle from the drunken self, but the latter does not similarly try to deceive the former."

Our evidence suggests that hot and impulsive selves indeed seem to be less likely to anticipate the deviant behavior of a future self in a different emotional state. In this sense, our evidence suggests that the hot-to-cold empathy gap is empirically more important than the cold-to-hot empathy gap. This implies that self-commitment is a strategic advantage of the "cold self". Therefore, for the cold state, we should at least consider the possibility that participants are not simply mispredicting but farsightedly disagreeing with future preferences in a different emotional state.

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15

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Appendix: On-Screen Instructions for the Cold-to-Hot Condition (originally in German)

This appendix reports the on-screen instructions for the cold-to-hot condition (originally in German). The instructions for the hot-to-cold condition were identical except for the fact that dates and times were modified accordingly.

1st Online Session

1st Screen

Welcome and thanks for your participation in this online experiment!

In the following, please press the button "continue" only after you have carefully read the instructions provided on the screen.

Please press "continue" to proceed.

2nd Screen

Important information concerning the experiment:

You will receive your payment for participation on Tuesday, 08th February 2011, between 6.00 and 9.00 a.m. in our computer laboratory in the Goethegalerie. As you can see in the following table, this time frame is divided into twelve 15 minutes time slots with different payments.

Time Slot	Earliest Arrival (a.m.)	Latest Arrival (a.m.)	Payment (€)
1	6.00	6.15	16.90
2	6.15	6.30	16.10
3	6.30	6.45	15.30
4	6.45	7.00	14.50
5	7.00	7.15	13.70
6	7.15	7.30	12.90
7	7.30	7.45	12.10
8	7.45	8.00	11.30
9	8.00	8.15	10.50
10	8.15	8.30	9.70
11	8.30	8.45	8.90
12	8.45	9.00	8.10

You have to decide today and in the 2nd online session in which time slot you want to show up to the laboratory. Your two choices may, but need not, coincide. A random draw will determine at the end of the 2nd online session which of your two choices will be relevant. Of course, you will be informed about this at the end of the 2nd online session.

Please notice that you will only receive a payment during the time slot you have chosen. If you show up earlier, you will have to wait. If you show up later, you will not receive any payment.

The entrance "Schillerstraße" of the Goethegalerie (coming from the direction of the Löbdergraben) will be open from 5.45 a.m. on. Crossing the threshold to the computer lab is decisive for the time measurement which will be taken by us manually with a radio-controlled clock.

Please press "continue" to proceed.

3rd Screen

On the following screen, you will be asked to choose a time slot. In the 2nd online session, you will be asked to remake the choice of the time slot. The choice, which you will then have, will be the same as today. You will be able to select any time slot you like (including the time slot that you will choose today, of course).

Your 2nd online session will take place on Tuesday, 1st February 2011,

between 5.30 and 6.00 a.m. in the morning.

At the end of the 2nd online session, a random draw will decide whether your choice from this online session or your choice from the 2nd online session will be relevant for you. For this purpose, you determine the composition of a virtual urn with 10 balls. In the following, you will choose how many of the balls represent your choice of today, and how many of the balls represent the choice which you will make in the 2nd online session.

To this end, please choose one of the following two alternative and then press "continue" to proceed.

1. 2 balls represent your choice of today while 8 balls represent the choice which you will make in the 2nd online session.

2. 8 balls represent your choice of today while 2 balls represent the choice which you will make in the 2nd online session.

4th screen

Please choose now one of the time slots from the following list for the laboratory session on Tuesday, 8th February 2011. Then please press "continue" to proceed.

Time Slot	Earliest Arrival (a.m.)	Latest Arrival (a.m.)	Payment (€)
1	6.00	6.15	16.90
2	6.15	6.30	16.10
3	6.30	6.45	15.30
4	6.45	7.00	14.50
5	7.00	7.15	13.70
6	7.15	7.30	12.90
7	7.30	7.45	12.10
8	7.45	8.00	11.30
9	8.00	8.15	10.50
10	8.15	8.30	9.70
11	8.30	8.45	8.90
12	8.45	9.00	8.10

5th Screen

This 1st online session is now over.

On the eve of the 2nd online session before 2 p.m. you will receive an e-mail with an access web link. In this e-mail, you will be reminded of the time frame in which the web link will be activated. As a precaution, please log in 15 minutes before the expiration of the time frame, since you will need a couple of minutes to answer the questions.

2nd Online Session

1st Screen

Welcome to the 2nd Online Session!

In the following, please press the button "continue" only after you have carefully read the instructions provided on the screen.

Please press "continue" to proceed.

2nd **Screen**

Please choose one of the time slots from the following list for the laboratory session on Tuesday, 8th February 2011. Then please press "continue" to proceed.

Time Slot	Earliest Arrival (a.m.)	Latest Arrival (a.m.)	Payment ($\in$)
1	6.00	6.15	16.90
2	6.15	6.30	16.10
3	6.30	6.45	15.30
4	6.45	7.00	14.50
5	7.00	7.15	13.70
6	7.15	7.30	12.90
7	7.30	7.45	12.10
8	7.45	8.00	11.30
9	8.00	8.15	10.50
10	8.15	8.30	9.70
11	8.30	8.45	8.90
12	8.45	9.00	8.10

3rd **Screen**

According to the composition of the urn which you have chosen in the 1st online session, the random draw has selected the choice of the

$$1^{st} \ (2^{nd}) \ online \ session$$

to be relevant. This means that on Tuesday, 8th February 2011, you may show up

$$between \ ... \ and \ ... \ a.m.$$

to our computer laboratory in the Goethegalerie to collect your payment of ... $\in$. If you show up earlier, you will have to wait. If you show up later, you will not receive any payment.

Please bring your ID to the laboratory session.