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Temporal distance and accessibility of overt and covert trait-aspects in judgments of self and others

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ABSTRACT

Results of previous studies show that, compared to other-judgments, self-judgments are characterized by higher accessibility of covert (unobservable) versus overt (observable) features. The current experiment examined trait-judgment latencies in two time-frames: recent past and distant past. In a 2x2x2 within-subject design, participants (N = 224) made self-judgments versus other-judgments, involving recent past versus distant past, and covert (e.g., *feels happy*) versus overt (e.g., *acts happy*) trait-related features. Results show that the enhanced accessibility of covert features in self-judgments is limited to the recent self and does not occur for self that is temporally distant. In contrast, for other-judgments, overt features are more accessible regardless of the time-frame. This suggests that compatibility between self-representations and other-representations increases over time.

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An important difference between how self and others are represented in memory concerns vantage point (Andersen et al., 1998; Malle, 2006; Nigro & Neisser, 1983; Pronin, 2008, 2009; Vazire, 2010; Vazire & Carlson, 2010). Introspection provides what typically feels like a direct access to our own internal states: thoughts, feelings, and motivations but not to the internal states of others (Pronin, 2009). Regardless of its questionable ontological status (Mercier & Sperber, 2017; Nisbett & Wilson, 1977) the unrelenting flow of introspective content exerts a powerful impact on the formation of personal memories. It is, to a large degree, from such memories that our mental representations of self are extracted. Thus, unsurprisingly, self-representations are constructed primarily from the kind of stuff that predominates the flow of introspective experience: hopes, fears, plans, emotions, visceral sensations, etc.

Like other complex mental representations, the momentary construal of a person, self, or other, is guided by a dynamic process and can be heavily influenced by both chronic accessibility and situational context (Conway, 2005; Kihlstrom et al., 2003; McConnell, 2011; McConnell et al., 2013; Skowronski, 2012). While there is currently no universally accepted view of how various aspects of person memory come into play in shaping the construal of such representations, there is an emerging consensus that mental representations of self

and others should not be viewed as unitary concepts but rather as dynamically changing constellations. They can vary in abstractness, from highly situation-specific representations based on detailed episodic memories (Sakaki, 2007; Tulving, 1983, 2002) to abstract representations relying on semantic person memory and expressed in trait-judgments (Klein & Loftus, 2014; Klein et al., 1996). Similarly, the person representations can differ in modality, including predominantly visual, auditory, olfactory, etc., or predominantly verbal/conceptual (e.g., a collection of self-descriptive or other-descriptive trait-adjectives).

It has been shown that the relative predominance of covert, unobservable features characterizes both highly situation-specific, episodic, autobiographical memories (Berntsen & Rubin, 2006; Karylowski & Mrozinski, 2017a, 2017b; Kuyken & Moulds, 2009; Mclsaac & Eich, 2002, 2004) and generalized, semantic autobiographical memories (Andersen et al., 1998; Karylowski & Mrozinski, 2017b; McGuire & McGuire, 1986; Prentice, 1990; Vazire, 2010). Those differences are manifested not just in content but also in accessibility. For instance, Karylowski and Ranieri (2006) have shown that preceding a trait adjective (e.g., *happy*) with a qualifier *feels* or *looks* (e.g., *feels happy*, referring to covert, unobservable trait aspects or *looks happy*, referring to overt, observable trait aspects¹) has opposite effects on latencies of self-*versus* other-judgments. Specifically, *feels* judgments were significantly faster than *looks* judgments when self served as the target but significantly slower than *looks* judgments when another person served as the target. Other research shows that the same generic trait-label (e.g., *happy*) may be spontaneously interpreted primarily in terms of its covert, unobservable manifestations (*feels happy*) when applied to self but primarily in terms of its overt, observable manifestations (*looks happy*) when applied to another person (Niewiarowski & Karylowski, 2008, 2015).

There are reasons, however, to believe that a clear distinction regarding how self *versus* others are typically represented in terms of covert and overt aspects does not always apply. For one thing, with increased familiarity and increased psychological closeness there is a tendency to represent such other persons more in line with how self is normally represented (Andersen & Baum, 1994; Andersen et al., 2015). Also, empirical evidence shows that the predominantly internal vantage point in autobiographical memories holds for recent but not for old memories. Apparently, with the passage of time, autobiographical memories lose their characteristic internal perspective and move closer to the external perspective normally seen in memories centering on other (McDermott et al., 2016; Rice, 2010; Rice & Rubin, 2009, 2011). This has been demonstrated in the content of recalled autobiographical memories (Butler et al., 2016; Marcotti & St Jacques, 2018; Verhaeghen et al., 2018), in making attributions (Pronin & Ross, 2006; Terry & Horton, 2007), and in accessibility of memory-based self-judgments involving covert and overt manifestations of personal characteristics (e.g., *feels happy* versus *acts happy*). Moreover, for accessibility, the effect of time distance has been shown not just for highly event-specific episodic autobiographical memories (e.g., participating in a family dinner recently versus several years ago, Karylowski & Mrozinski, 2017a) but also for generalized, semantically encoded, views of the self in different time periods (e.g., oneself recently versus several years ago, Karylowski & Mrozinski, 2017b). Furthermore, it appears that even though judgments based on situation-specific (rather than generalized) autobiographical memories show greater initial accessibility advantage of covert compared to overt aspects, the effect of time distance is in both cases similar (Karylowski & Mrozinski, 2017b).

The shift in vantage point from predominantly internal focus characteristic of contemporaneous (or recent) self-representations toward a more external focus characteristic of self-representations anchored in a more distant past creates an interesting possibility that having a longer time perspective might help in increasing compatibility between how self and others are mentally represented, even others that are not highly familiar/psychologically close. Such increases in representational compatibility would be consistent with a pervasive anecdotal evidence that with the passage of time we are more capable to understand other people's perspective, even though in our contemporaneous perceptions their actions might have seem unjustified, morally reprehensible, irrational, etc.

Obviously, the argument relies on the assumption that the time-related shift toward a more external focus seen in self-representations is not accompanied by a similar shift in the representations of others. The main purpose of the present paper was to test this assumption.

Following previous work (Karylowski & Mrozinski, 2017a, 2017b), we focused on accessibility of covert (unobservable), *versus* overt (observable), features in trait-judgments regarding recent *versus* distant past. Unlike in previous work, not only self-judgments but also other-judgments were included in the design. Thus, in the present experiment, participants were making (a) self-judgments *versus* other-judgments involving (b) covert (e.g., *feels happy*) *versus* overt (e.g., *acts happy*) trait manifestations anchored (c) in the recent past *versus* in the distant past. Based on previous results, our prediction was that for self-judgments, temporal distance should at least reduce, if not reverse, accessibility advantage of covert (unobservable) trait-aspects. This would manifest itself in a two-way interaction between time frame and accessibility of covert (*feels*) *versus* overt (*acts*) aspects of self-judgments and the time distance. However, no such effect was expected for other-judgments. Overall, the expected pattern of results would manifest itself as a three-way interaction between the accessibility of overt (*feels*) *versus* covert (*acts*) trait-aspects, recent *versus* distant time-frame, and *self versus* other as judgment target. On a more general level, this would imply an increasing convergence over time between how self and others are mentally represented.

While we are not aware on any previous data demonstrating such an increased convergence over time, the prediction can be supported based on a tendency of memory representations to become less specific over time (Jeunehomme et al., 2018; H. L. Williams et al., 2008; J. M. G. Williams et al., 2007; McClelland et al., 1995; O'Reilly & Rudy, 2001; Wiltgen & Silva, 2007). In the case of self-representations this suggests losing at least some of the original focus on the details of own's own thoughts, feelings, and other introspectively accessed privileged content. In contrast, in the case of the other-representations, it would be the initial focus on the details of the persons observed actions that would fade with the passage of time. As a result, incompatibility between how self and others are represented should decrease.

Keeping in mind that the effects of time distance on the accessibility of covert *versus* overt trait-aspects in self-judgments occur both for situation-specific and for generalized autobiographical content, we decided to focus on generalized content, specifically on trait judgments regarding self (or other) in two broadly defined time-frames: "recently" *versus* "about 10-years ago." Our main reason for focusing on generalized rather than situation-specific representations had to do with potentially greater applicability of the expected results. Arguably, showing that time distance is associated with the increased

compatibility between generalized representations of self *versus* others would suggest broader implications than a similar finding regarding representations that are situation-specific. This is because, increased compatibility would be expected to facilitate the use of self as a point of reference, particularly for self-representations that are applicable across a variety of situations.

Method

Participants

Two-hundred-and-twenty-four Polish undergraduates (171 women and 53 men, average age $M = 21.72$ years, $SD = 4.30$) participated in the experiment as an option for satisfying an academic extra-curricular activity requirement. To help fully preserve privacy and because the experiment was considered a low-risk study, no written consent forms were signed. Instead, a formal oral consent was obtained from each participant individually prior to the experiment. The Psychology Research Ethics Committee at the SWPS University of Social Sciences and Humanities approved the study, including the consent procedure.

Design and procedure

The experiment was conducted individually in the computer lab. Participants were asked to make trait-judgments regarding how they and another person (an acquaintance) were typically feeling (covert trait-manifestations) and how they and the other typically acted (overt trait-manifestations) during two periods of their lives: recently and about 10 years ago.

A total of 64 trait-adjectives were used. The adjectives were selected from a list compiled by Wojciszke (2010) and were all positive, ranging from $min = 1.88$ to $max = 4.40$ on a -5 to $+5$ valence scale ($M = 3.68$; $SD = 0.48$). For each participant, each of the 64 trait-adjectives appeared twice – once in self-judgments and once in other-judgments. Thus, each participant was asked to make 128 trait-judgments. Within each target (self *versus* other), the order of trait-adjectives was constant for all participants. Before proceeding to the trait-judgment task, each participant was asked to provide the first name or a nickname of a same-sex long-term acquaintance. Participants were advised to select someone they knew for at least 10 years but did not consider a close friend.

The experimental task was divided into two parts focusing on the two different time-frames: recent past and distant past (defined as about 10 years ago). Each part consisted of eight blocks of judgments with eight judgments in each block. The order of the two parts was counterbalanced across participants. Before providing trait-judgments for each of the two time-frames, participants were asked to try to vividly recall how they viewed themselves and how they viewed the other person during that particular time-frame. This was done to encourage participants to access their time-specific representations of the self and of the other person.

Within each time-frame, participants made judgments about themselves for half of the blocks and made judgments about their acquaintance for the other half of the blocks. We counterbalanced the order in which participants made judgments about themselves and their acquaintance. Also, half of the blocks involved judgments of overt trait aspects (e.g., *acts happy*) and the other half involved judgments of covert trait aspects (e.g., *feels happy*),

again, counterbalanced across participants. Thus, overall, the 16 blocks formed a 2x2x2 completely balanced design with each combination of the three within-participant factors – judgment target: self *versus* other, trait aspect: feels *versus* acts, and time-frame: recent *versus* distant – appearing in two blocks.

Trait judgments were made in response to questions presented in the following format: “Does trait [*traitname*] describe [*your*]/[*other’s name*] [*feelings*]/[*acts*] [*recently*]/[*in distant past*]?” Because target, aspect, and time were constant within each block, trait name was the only part of the display that changed from trial to trial. Participants were asked to work at the fastest comfortable pace and were informed that both their responses and their response latencies were recorded. Responses were provided on a two-point (Yes/No) scale using “A” and “L” keys on a standard keyboard with the assignment of the two keys counterbalanced across participants.

Results

Percentages of yes versus no responses in trait-judgments

Responses with latencies shorter than 500 ms (1.05% of responses) were assigned to missing. For the remaining responses, on average, participants responded with *yes* in 71.1% of trials, a percent significantly higher than the 50% expected by chance, $t(223) = 29.60, p < .001, d = 1.98$. Keeping in mind that only positive traits were used in the present experiment, this result is consistent with a well-documented finding that, in general, both self and personally known others tend to be viewed favorably (e.g., Sears, 1983). Average percentages of the *yes* responses out of 16 trials representing each of the 8 combinations of the 2 (target: self *versus* other) x 2 (aspect: feels *versus* acts) x 2 (time: recent *versus* distant) within-subject design are presented in Figure 1.

Results of a 2x2x2 repeated measures ANOVA performed on those average percentages revealed both the main effect of referent and the main effect of time, $F(1, 223) = 20.26, p < .001, \eta^2 = .08$ and $F(1, 223) = 27.27, p < .001, \eta^2 = .11$, respectively. Those main effects were qualified by a significant referent x time interaction, $F(1, 223) = 12.01, p = .001, \eta^2 = .05$.

Examination of simple effects revealed that, in the case of recent past, average percentage of *yes* responses was significantly higher for self-judgments, than for other-judgments, $F(1, 223) = 36.38, p < .001, \eta^2 = .14$. However, in the case of distant past, the difference, while in the same direction, was not significant, $F(1, 223) = 2.63, p > .1$. Also, the percentage of the *yes* responses was significantly higher for recent, compared to the distant time-frame, in the case of self-judgments, $F(1, 223) = 45.44, p < .001, \eta^2 = .17$, but not in the case of other-judgments, $F(1, 223) = 2.58, p > .1$. We will return to this set of results when we focus on the latency effects of the *yes versus no* responses and in the Discussion. No other significant effects emerged in the omnibus ANOVA.

Response latencies of trait-judgments

Response latencies of trait-judgments involving covert (feels) and overt (acts) trait aspects constituted the principal dependent variable of interest. The main analysis was conducted for latencies regardless of whether the participant’s response was *yes* or *no*. Effects

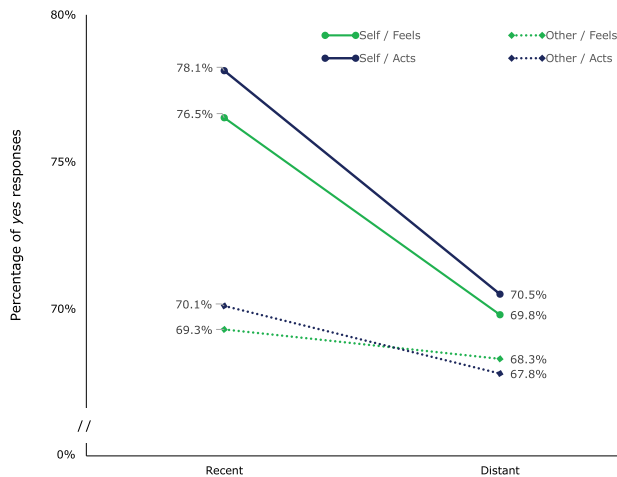


Figure 1. Percentage of Yes responses as a function of target, trait-aspect, and time.

associated with the response type, were, nevertheless assessed in auxiliary analyses and will be reported after the results of the main analysis are presented. The decision not to include response type in the main analysis was based on two considerations:

(1) With a 2-point scale, not only *yes* but also *no* responses may be seen as reflecting trait-judgments. Specifically, many traits represent bi-polar constructs, the *no* response may be interpreted as an endorsement of a characteristic opposite to the one for which the judgment is made. Conducting the main analysis of latency data for *yes* and *no* responses together ensures the integrity of the counterbalancing employed in the design – clearly, no counterbalancing scheme could anticipate *yes versus no* judgments of individual participants.

(2) While, as previously described, analyses performed on average percentages of *yes* and *no* responses showed some reliable effects, no effects involving trait-aspect were found. Because all our predictions regarding latencies concern interactions with trait-aspect, it seemed unlikely that any evidence for such predictions could result from differences in the percentage of *yes* and *no* responses. Indeed, a previously published experiment in which response latency effects of trait-aspect, including its interaction with time-frame, were assessed (Karylowski & Mrozinski, 2017b) revealed that the effects involving the trait-aspect variable were similar regardless of the response type.

Latencies shorter than 500 ms (1.05% of responses) and latencies longer than 10,000 ms (0.85% of responses) were considered invalid and were dropped from the analysis. Also, to further reduce positive skew, latencies were converted to natural logarithms (see Winer, 1971, p. 200). Preliminary analysis revealed a practice effect across the 128 trials, with higher serial position associated with shorter latencies – the average Fisher's z value was $M = -0.27$ corresponding to $r = -.25$ and was reliably different from 0; $t(223) = 21.06$, $p < .001$, $d = 1.41$. Accordingly, in order to reduce error variance, the main analysis was performed on latencies regression-adjusted for the effect of serial position. The latencies were then collapsed across 16 trials representing each of the eight level combinations of the 2 (target: self *versus* other) \times 2 (aspect: feels *versus* acts) \times 2 (time: recent *versus* distant) within-subject design. Mean latencies are presented in Figure 2.²

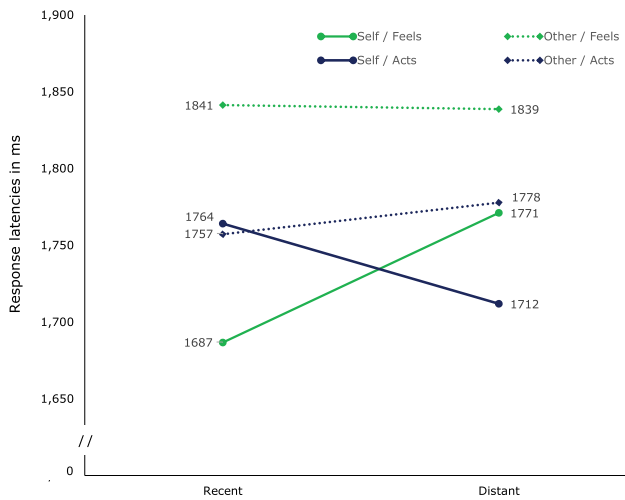


Figure 2. Response latencies as a function of target, trait-aspect, and time.

A 2x2x2 repeated measures ANOVA revealed both the main effect of referent and the main effect of aspect, $F(1, 223) = 13.63, p < .001, \eta^2 = .06$ and $F(1, 223) = 4.99, p = .026, \eta^2 = .03$, respectively. However, those effects were qualified by a significant referent x aspect interaction, $F(1, 223) = 7.79, p = .006, \eta^2 = .03$. Examination of simple effects revealed that, when participants made judgments about another person, latencies were significantly shorter for overt $M = 1767$ ms, compared to covert trait-aspects, $M = 1840$ ms, $F(1, 223) = 11.97, p = .001, \eta^2 = .05$. Yet, for self-judgments, latencies were minimally (and non-significantly) shorter for covert $M = 1728$ ms, compared to overt trait-aspects, $M = 1738$ ms, $F(1, 223) < 1, n.s.$

The referent x aspect interaction is consistent with the previously reported data showing that, compared to the representations of self, representations of others are characterized by relatively high accessibility of overtly – as opposed to covertly – expressed characteristics (see Karylowski & Mrozinski, 2018 for a recent review). Importantly, however, the current 2-way interaction is qualified by the predicted significant referent x aspect x time interaction, $F(1, 223) = 6.35, p = .012, \eta^2 = .03$. This three-way interaction will first be examined by focusing on simple interactions between trait-aspect and time for each of the two targets separately. In replication of earlier findings (Karylowski & Mrozinski, 2017a, 2017b), for self-judgments, there was a significant aspect x time interaction, $F(1, 223) = 7.83, p = .006, \eta^2 = .03$. Follow-up examination of simple effects revealed that for self-judgments involving the recent past, the feels judgments were significantly faster than the acts judgments, $F(1, 223) = 5.37, p = .021, \eta^2 = .02$. However, for self-judgments involving distant past, the acts judgments were significantly faster, $F(1, 223) = 4.42, p = .037, \eta^2 = .02$. Also, feels judgments regarding the self were faster for recent past compared with the distant past, $F(1, 223) = 6.87, p = .009, \eta^2 = .03$. Yet, for the acts self-judgments, there was a tendency in the opposite direction, $F(1, 223) = 3.20, p = .075, \eta^2 = .01$. As can be seen in Figure 2, no such patterns were present for other-judgments. Accordingly, the aspect x time interaction for other-judgments did not approach statistical significance, $F(1, 223) < 1, n.s.$ Thus, our results indicate that the time-related shift toward a more external focus seen in self-judgments is, indeed, specific and is not accompanied by a similar shift in other-judgments.

The specificity of this time-related shift translates to an increased compatibility between what aspects of self and other become accessible. Examination of simple interactions between target and aspect for the two time-frames separately revealed that the two-way interaction was significant for judgments involving recent, $F(1, 223) = 10.87, p = .001, \eta^2 = .05$ but not for judgments involving distant time $F(1, 223) < 1, n.s.$ Consistent with means presented in [Figure 2](#), for feels *versus* acts judgments made using the recent time-frame, the target \times aspect interaction reflected the familiar pattern of effects in which these judgments assume an opposite pattern depending on the target: for the self, feels judgments were faster, $F(1, 223) = 5.37, p = .021, \eta^2 = .02$, while for the other, acts judgments were faster, $F(1, 223) = 8.19, p = .005, \eta^2 = .04$.

Auxiliary analysis: controlling for yes *versus* no responses

An auxiliary analysis was conducted to assess the robustness of the main findings when including the response type in the analysis. As previously discussed, because the response type was not under experimental control, in order to fully preserve the counterbalancing scheme, yes and no responses were pooled for the main analysis.

We expected that the results of the auxiliary analysis should confirm both the target \times aspect interaction and the target \times aspect \times time interaction and that those interactions would not be modified by higher-order interactions involving response type. On the theoretical level, those predictions assumed that a no response may be interpreted as an endorsement of a characteristic opposite to one described by the trait-adjective in question. Moreover, we could see no theoretical reason why those interactions should occur for favorable (yes responses) but not for unfavorable (no responses) characteristics.

This however does not mean that no effects of response type were expected. On the contrary, because all trait-adjectives were positive, both person-positivity bias (e.g., Sears, 1983) and the self-serving bias (e.g., Alicke & Sedikides, 2009) would predict effects analogous to those seen in analyzing percentages of yes *versus* no responses. Specifically, we expected to find shorter latencies for the yes responses, particularly for self-judgments, and especially for self-judgments involving the recent past. This last prediction was based on self-esteem enhancing properties of perceiving that one improves over time (e.g., Ross & Wilson, 2003).

To include response type (yes *versus* no responses) in the analysis, the most obvious solution would be to re-run the repeated measures ANOVA with the response type included as an additional (fourth) independent variable. However, this was not feasible because over 25% of participants ($n = 57$) would have to be excluded due to missing data for at least one of the within-subject combinations. Thus, the analysis was conducted using mixed-effects models as implemented in R's (R Core Team, 2018) lmerTest library (Kuznetsova et al., 2017). The analysis utilized a $2 \times 2 \times 2 \times 2$ full factorial model specified for fixed effects and the response type slope as a random effect³ (see Bates et al., 2018; Matuschek et al., 2017, for the discussion on specifying random effects).

Results of this analysis confirmed our main findings: both the target \times aspect interaction, and the target \times aspect \times time interaction remained significant $F(1, 28,033) = 9.62, p = .002$ and $F(1, 28,031) = 14.11, p < .001$, respectively. Moreover, as expected, neither interaction was significantly modified by the response type, $F(1, 27,931) = 1.65, n.s.$, for the

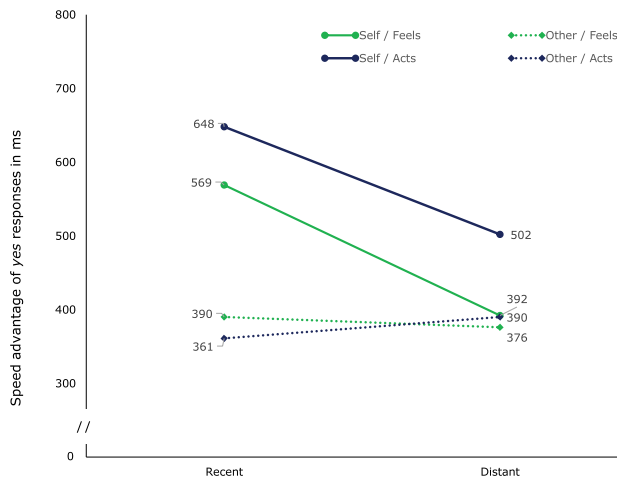


Figure 3. Speed advantage associated with the Yes responses depending on target, trait-aspect, and time.

target x aspect x response type interaction, and $F(1, 27,927) < 1$, n.s., for the four-way interaction. Thus, with response type included in the analysis, conclusions of the main analysis remain intact.

Turning to other findings, a highly significant main effect of the response type emerged, $F(1, 221) = 290.48$, $p < .001$. As expected, the yes responses were on average faster, $M = 1665$ ms than the no responses, $M = 2019$ ms. The effect was modified by three significant interactions: between target and response type, $F(1, 26,837) = 26.67$, $p < .001$; between time and response type, $F(1, 27,552) = 5.39$, $p = .020$; and finally, a three-way interaction between target, time, and response type, $F(1, 27,756) = 6.97$, $p = .009$. No other significant effects involving response type emerged in the analysis. As can be seen in [Figure 3](#), consistent with the three significant interactions, the effect of response type, i.e. the speed advantage associated with the yes responses, was more pronounced in the case of self-judgments, particularly when such judgments involved recent time frame. This occurred regardless of the trait aspect (feel versus act judgments). Not surprisingly, the latency effects associated with the response type mirror results for the percentage of yes responses as presented in [Figure 1](#). Thus, not only – as presented in [Figure 1](#) – were the yes responses more prevalent (compared to the no responses), especially for self-judgments, and particularly for self-judgments involving recent time, but also – as presented in [Figure 3](#) – the yes responses were faster than the no responses, again, especially for self-judgments, and particularly for self-judgments involving recent time.

Discussion

Our results replicate two previously reported findings (Karylowski & Mrozinski, 2017a, 2017b) regarding the accessibility of covert (unobservable), *versus* overt (observable) aspects of traits in judgments of self and others. The first of those findings shows

that compared to self-judgments, other-judgments are characterized by higher chronic accessibility of overt, observable trait aspects. Operationally this is demonstrated by relatively faster judgments regarding how the self was feeling and how the other acted. On the other hand, judgments regarding how the self was acting and how the other was feeling tend to be comparatively slow. The second replicated finding concerns self-judgments only. It shows that greater accessibility of covert, unobservable information characteristic of self-judgments applies to self-judgments anchored in the recent past but not to self-judgments anchored in the distant past. Operationally, this is demonstrated by relatively faster feels self-judgments for the recent past and acts self-judgments for the distant past. On the other hand, judgments regarding how the self was acting in the recent past and how the self was feeling in the distant past were comparatively slow.

Those two findings point to the replicability of the relevant effects. Hopefully, they may also serve to boost confidence in the methodological soundness of the present experiment and thus in the replicability of the remaining findings. This is particularly relevant given the fact that the present contribution is based on a single experiment, albeit one with a relatively large sample and utilizing a within-subject design.

A main new contribution of the present experiment is the demonstration that the effect of time frame (recent *versus* distant past) is specific to self-judgments and does not apply to other-judgments. This complements results obtained by Pronin and Ross (2006) who showed that in making attributions about past selves, individuals tend to display patterns normally seen in making attributions about others, thus paralleling classic actor-observer differences (Jones & Nisbett, 1972). The attributional phenomenon of “self seen as another” (Pronin & Ross, 2006) fits nicely with our pattern of results regarding accessibility. Highly accessible introspection-based internal states are likely to be dominated by transient evaluative and motivational responses to the external environment, thus leading to attributions consistent with the actor-perspective. With the increased accessibility of overt, observable, behavioral content which characterizes past selves (as well as the representations of others, regardless of the time distance) observer-type attributions should become more likely.

Interestingly, and consistent with the construal-level theory (Trope & Liberman, 2010), those attributional phenomena occur not only for time distance measured from present to the past but also for such distance measured from present to the future (Pronin & Ross, 2006; Wakslak et al., 2008). While this evidence is highly consistent, it is based entirely on self-report measures that might be susceptible to demand characteristics. Subsequent research will systematically examine accessibility effects for the representations of self and others in the past and in the future. Should such research prove successful in showing comparable effects for the future as for the past while using response latencies as a performance-based measure of accessibility, this would provide corroborative evidence for previous findings. It would also suggest accessibility as a common psychological mechanism responsible for both past-directed and future-directed distance effects in making attributions.

Our main finding – demonstrating that the relative increase in accessibility of overt (compared to covert) content over time is specific to how self is represented and does not apply to the representations of others – implies that, with the passage of time, self-representations and other-representations become more compatible, at least with

respect to accessibility of covert, unobservable, versus overt, observable, content. Importantly, such increased compatibility could have an effect of neutralizing biases normally associated with incompatibility characteristic of the more contemporaneous representations of self and others. Pronin (2008, 2009) has argued that systematic differences between how self is represented, compared to how others are represented, in terms of the covert/overt distinction, contribute to a variety of social ills, including biased social judgments, miscommunication, interpersonal conflict, and dehumanization. Those problems are further amplified by difficulties in recognizing certain biases in oneself while being clearly aware of their operations in others. For instance, heavy reliance on one's (presumably good) intentions yet, judging others based not on their intentions but on the observed behavior is likely to contribute to self-serving bias. And because self-serving bias occurs as a result of processes that are largely automatic, thus not available to introspection, our reliance on introspection will make it difficult to see the bias in our own judgments. At the same time, we may have no difficulty in detecting such bias in another person, simply by making inferences based on that person's observable actions. Furthermore, incompatibility between how the current self is typically represented compared to the representations of others may pose a barrier to our ability to take the other person's perspective. This is because such incompatibility will make it more difficult to utilize the vast network of our own experiences as reflected in autobiographical memories (Karylowski & Mroziński, 2018; Karylowski et al., 2000). As a result, our ability to understand others and to predict their behavior is likely to suffer.

Future research should focus on the consequences of such increased compatibility for a variety of social-cognitive phenomena. For instance, would activation of past rather than contemporaneous selves trigger a decrease in self-favoring biases that normally influence self-other comparisons and fuel miscommunication, and interpersonal conflict (Alicke & Sedikides, 2009; Pronin, 2008, 2009)? Would such activation promote recognition that like oneself, others have free will, that they, too, strive to achieve personal goals, that they may experience powerful hopes fears and desires? If so, would it promote the sense of we-ness and discourage dehumanization? Furthermore, research should also focus on the effects of increased self-other compatibility on the recruitment of self as a point of reference in thinking about others (Karylowski & Mroziński, 2018; Karylowski et al., 2000). Such recruitment would facilitate *judgments by proxy* (Beike & Sharman, 2014; Mussweiler & Epstude, 2009) about (less familiar) others by allowing to substitute readily available information about the self for missing information about the other person. An increased opportunity for bringing to mind our own experiences, as reflected in a rich network of autobiographical memories, when thinking about others, might help in understanding those other people better and in predicting their behavior more accurately. Of course, depending on additional factors, it may also result in projecting our self-knowledge on others inaccurately, thus leading to biased judgments. Once again, the consequences of increasing compatibility between how self and others are represented should be addressed in future studies.

Future studies should also explore factors affecting time distance necessary to produce meaningful effects of increased compatibility. Research by Libby and Eibach (2002) suggests that, with the time distance constant, perceived dissimilarity between the current self and a past self may lead to adopting a third-person

perspective when visualizing our own past actions. This in turn leads to processing information about the self in ways that are normally characteristic for processing information about others (Shaeffer et al., 2015). Thus, it follows that even a relatively small time distance might be sufficient to produce meaningful effects if we see ourselves as changed. In addition, effects of time may also be facilitated by the presence (and saliency) of “temporal landmarks” separating the present self from a past-anchored self. Such landmarks consist of important personal or public events that serve as reference points in organizing autobiographical memory (Peetz & Wilson, 2013; Shum, 1998). Thus, it seems that even a relatively small time distance might be sufficient to produce meaningful effects if we see ourselves as changed and/or if the two points in time are separated by a salient temporal landmark.

Our results appear to be robust with respect to self-/other-descriptiveness. Specifically, the effects were not affected by whether the participant indicated that the trait was or was not descriptive of the target (*yes versus no* responses). Yet, as predicted, consistent effects related to self-descriptiveness were evident. Those effects were seen both in analyzing percentages of *yes* and *no* responses and in analyzing response latencies. Thus, overall, compared to the *no* responses, the *yes* responses were characterized by both higher frequency and shorter latencies. This was true particularly for self-judgments, and especially for self-judgments involving recent past. This pattern of results is unsurprising. Keeping in mind that only positive traits were used in the experiment, higher frequency and shorter latencies of the *yes*, compared to the *no* responses would be expected based on person-positivity bias, a general tendency to evaluate individuals positively (e.g., Sears, 1983). That such tendencies should be particularly pronounced in self-judgments (rather than in other-judgments) and especially in self-judgments regarding recent (rather than distant) time-frame, can be explained in terms of a combination of two additional well-documented phenomena: self-serving bias (e.g., Alicke & Sedikides, 2009) and a self-esteem enhancing consequences of perceiving oneself as improving over time (e.g., Ross & Wilson, 2003). While those effects are outside of the main focus of the present experiment, their presence (with the simultaneous absence of higher-order interactions qualifying our main findings) serves as an additional evidence for the robustness of those main findings.

Conclusion

Overall, the present results replicate two previously reported findings regarding the accessibility of overt *versus* covert trait aspects in trait-judgments. Firstly, compared to self-judgments, other-judgments are characterized by greater accessibility of overt as opposed to covert trait-aspects (Karylowski & Ranieri, 2006; Mrozinski & Karylowski, 2011). Secondly, for self-judgments, greater accessibility of covert aspects as compared to overt aspects occurs for contemporaneous representations but not for representations involving distant past (Karylowski & Mrozinski, 2017a, 2017b). Furthermore, our results show that the second effect is specific, it occurs for self-but not for other-judgments. This last result represents a new finding and suggests that time distance increases compatibility between how self and others are represented.

Notes

1. In other experiments (e.g., Karylowski & Mrozinski, 2017a, 2017b) acts was used instead of looks to denote overt trait aspects, yielding comparable results.
2. To facilitate presentation, throughout the paper, mean latencies are presented after being converted back to milliseconds.
3. Note that unlike the remaining independent variables included in this analysis, response type was not experimentally controlled (no counterbalancing).

Disclosure statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Ethics statement

All participants gave oral-informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the “SWPS University of Social Sciences and Humanities Departmental Ethics Committee.”

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