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Among Us: Fear of Exploitation, Suspiciousness, and Social Identity Predict Knowledge Hiding Among Researchers

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Supplementary Materials: Data, Materials, Preregistration [see [Index of Supplementary Materials](#)]



Abstract

Knowledge hiding in academia—the reluctance to share one’s ideas, materials or knowledge with other researchers—is detrimental to scientific collaboration and harms scientific progress. In three studies, we tested whether (a) knowledge hiding can be predicted by researchers’ latent fear of being exploited (i.e., victim sensitivity), whether (b) this effect is mediated by researchers’ suspiciousness about their peers, and whether (c) activating researchers’ social identity alleviates or rather amplifies this effect. Study 1 (N = 93) shows that victim-sensitive researchers whose social identity as a “researcher” has been made salient are particularly prone to knowledge hiding. Study 2 (N = 97) helps explaining this effect: activating a social identity increases obstructive self-stereotyping among researchers. Study 3 (N = 272) replicates the effect of victim sensitivity on knowledge hiding via suspiciousness. Here, however, the effects of the same social identity activation were less straightforward. Together, these findings suggest that knowledge hiding in science can be explained by victim sensitivity and suspiciousness, and that making researchers’ social identity salient might even increase it in certain contexts.

Keywords

victim sensitivity, knowledge hiding, cooperation, social identity



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Highlights

- Knowledge hiding in academia is detrimental to scientific collaboration and harms scientific progress.
- Knowledge hiding in science can be explained by a dispositional fear of exploitation (i.e., victim sensitivity) and suspiciousness.
- Activating researchers' social identity as a "researcher" does not alleviate but might even increase the suspiciousness of their peers in certain contexts.
- The findings suggest that we may need to change the stereotypical way we think about ourselves as researchers to build trust and a sharing environment among scientists.

Knowledge hiding—an individual's intentional attempt to withhold or conceal knowledge that has been requested by another person (Connelly et al., 2012, p. 65)—has received considerable attention in the work and organizational psychology literature. One reason is that knowledge hiding is harmful: it makes communication less efficient, it impedes creativity and productivity, and it creates an atmosphere of distrust (Černe et al., 2013). For organizations, knowledge hiding can be costly: Failing to share knowledge has cost Fortune 500 companies more than 30 billion US-\$ per year (Babcock, 2004).

To date, knowledge hiding has mainly been investigated among team members in organizations and private economies. The present paper extends this to knowledge hiding among researchers. While the specific knowledge that is shared vs. hidden may differ in content between the private economy and the scientific realm, the causes and consequences of knowledge hiding are comparable and maybe even more dramatic in science. After all, researchers who conceal their ideas, withhold important information about their research, or refuse to share their data with their colleagues threaten the efficiency, the creativity, and the productivity of the scientific system. For instance, publishing only significant effects (and burying null results in the file drawer) increases the chance of other researchers conducting the same useless studies and hunting effects that do not exist. Such failures would be less likely to occur if researchers published all of their studies, not only those that apparently "worked." Data sharing is another example. If researchers shared the raw data they collected with their peers, scientific progress would become much more efficient: data sharing would reduce the costs of unnecessarily collecting new data, and it would enable researchers to make the most of each dataset by exploiting it optimally and by agreeing on the best possible way to analyze it (Abele-Brehm et al., 2019; Ellemers, 2021).

Victim Sensitivity and Knowledge Hiding

Although individuals may hide their knowledge for many different reasons, one predictor is the risk of being exploited (Cabrera & Cabrera, 2002): Sharing one's knowledge with a colleague gives this colleague an advantage, and in a highly competitive context, giving others an advantage may imply a disadvantage for oneself. In other words, knowledge sharing implies a trust dilemma—those who tend to distrust others should be less willing to share their knowledge with them (Abele-Brehm et al., 2019; Connelly et al., 2012). Consequently, researchers who harbor a *latent* fear of being exploited should be particularly prone to knowledge hiding. A personality disposition that directly reflects such a latent fear of being exploited has been labeled “justice sensitivity from the victim's perspective” or simply “victim sensitivity” (VS; Gollwitzer & Rothmund, 2009; Gollwitzer et al., 2013; Schmitt et al., 2005, 2010).

Victim-sensitive individuals are hypervigilant towards contextual cues that are associated with meanness, malevolence, and untrustworthiness. Whenever such “meanness cues” are present, victim-sensitive individuals act uncooperatively, suspiciously, and selfishly towards others (Gerlach et al., 2012; Gollwitzer & Rothmund, 2011; Gollwitzer et al., 2009; Maltese et al., 2016; Rothmund et al., 2011). According to the Sensitivity-to-Mean-Intentions-Model (SeMI-Model, Gollwitzer & Rothmund, 2009; Gollwitzer et al., 2013), this effect is mediated by suspiciousness. Applying these findings to the case of knowledge hiding among researchers, one may hypothesize that, after being confronted with a “meanness cue,” highly victim-sensitive researchers are more prone to knowledge hiding than victim-insensitive researchers because they are more suspicious of their peers and do not want to end up being “the sucker” (Vohs et al., 2007).

Activating a Social Identity as a “Researcher”

While victim sensitivity is a risk factor predicting uncooperative and selfish behavior in social dilemmas, activating a social identity has been proposed (and found) to predict cooperative and other-oriented behaviors. If one's membership in a particular group is made salient, individuals are more willing to invest in their group and to cooperate with their fellow ingroup members (Balliet et al., 2014; Ellemers et al., 1997; Leach et al., 2008; Otten, 2016). This is due to a higher trust in other group members (Tanis & Postmes, 2005), a stronger belief that cooperative actions will be reciprocated in the group (Yamagishi & Kiyonari, 2000), and a stronger willingness to sacrifice individual goal-achievement for the sake of collective goal-achievement (De Dreu et al., 2015). In general, activating a social identity can alleviate group members' concerns about being exploited by their fellow ingroup peers. Recently, Gollwitzer et al. (2021) showed that collective identification with a group alleviated the effect of group members' victim sensitivity on cooperation: in groups in which members collectively identified with their

group, members were more likely to contribute to a public good, even if some group members were particularly victim-sensitive.

Does this also work in science? The academic environment is in many ways a competitive system, in which individuals are incentivized to strive for personal gain through prestigious awards, competitive funding, and many highly cited publications (Carson et al., 2013; Ellemers, 2021; Wellcome, 2020). This is captured by the saying “publish or perish,” which is well known in academic circles and encapsulates the pervasive narrative of scientific progress as a competition between rivals (e.g., Ellemers, 2021). Reminding people of being a member of this community by activating their social identity as a “researcher” might make the pressure to excel in the system, to surpass one’s colleagues in the job market, and to advance one’s own academic career (sometimes even at the disadvantage of one’s peers) particularly salient. Additionally, activating a “researcher” identity might lead members of the scientific community to adapt their self-perceptions and behavior in line with a prototypical researcher (self-stereotyping, Shih et al., 1999; Sinclair et al., 2006). Such a self-stereotype might also imply being more suspicious of and anxious about one’s competitors (i.e., colleagues).

Thus, activating a social identity as a “researcher” could go both ways: In line with typical research on social identity activation, it could alleviate suspiciousness and increase cooperation with ingroup members (i.e., fellow researchers), but it may also amplify the effect of suspiciousness on knowledge hiding among researchers due to specific obstructive attributes associated with that particular social identity (Altenmüller & Gollwitzer, 2022).

The Present Research

In three studies, we tested (1) whether knowledge hiding can be predicted by researchers’ dispositional victim sensitivity (i.e., a latent fear of being exploited), (2) whether this effect is mediated by researchers’ suspiciousness about their peers, and (3) whether activating a social identity as a “researcher” alleviates or amplifies this effect (i.e., a moderated mediation). We report all data exclusions, manipulations, and measures; materials (as combined in the preregistered Study 3), anonymized data, and analysis scripts are accessible online (see [Supplementary Materials](#)). In all analyses, we specify $p < .05$ as the significance threshold.

Study 1

Method

Participants

One-hundred German researchers were recruited via mailing lists. They were mostly contacted via their work-related e-mail addresses from one German university. Seven

participants had to be excluded due to pre-specified criteria (see below). The final sample consisted of $N = 93$ participants (55% female, 45% male) with a mean age of 34.41 years ($SD = 10.33$; ranging from 24 to 65). These researchers came from a variety of disciplines (mathematics and natural sciences: 41%; law, economics, and social sciences: 24%; medicine and health sciences: 20%; other: 15%). On average, they reported that doing research takes up 60–70% of their total occupational activities ($M = 6.61$, $SD = 2.79$, on a scale from 1 = “0–10%” to 10 = “90–100%”).

Materials and Procedure

After obtaining informed consent, participants completed an online questionnaire. First, we measured demographics (age, gender, scientific discipline, and percentage of work time exclusively devoted to doing research) as well as victim sensitivity with a 10-item scale from the Justice Sensitivity Inventory (Schmitt et al., 2010; e.g., “I cannot easily bear it when others profit unilaterally from me;” 6-point Likert scale ranging from 1 = *not at all* to 6 = *absolutely*; Cronbach’s $\alpha = .86$). Since previous research has shown that VS requires a trigger to activate a suspicious mindset (Gollwitzer et al., 2013; Süßenbach et al., 2016), we asked participants to vividly remember a situation when they trusted someone and were aware that this trust might be exploited. The situation did not have to have happened in a scientific/professional context. In fact, words like science, academia, university, research, etc. were explicitly avoided in this part of the survey.

Identity Activation Manipulation — Next, participants were randomly assigned to one of two conditions: In the personal identity condition, they were asked to write down what they as an individual could do about two specific societal problems (paper consumption and fake news on social media); in the social identity condition, they were asked what scientists¹ like them could do about these problems. This subtle manipulation had been successfully applied in previous research (Haslam et al., 1999).

Measured Variables — Suspiciousness—the proposed mediator variable—was measured with an 8-item scale developed specifically for the present purpose (based on the definition of a “suspicious mindset” in Gollwitzer et al., 2013; e.g., “I think one needs to look out for bad intentions of others;” 6-point Likert scale ranging from 1 = agree not at all to 6 = agree completely, Cronbach’s $\alpha = .78$). Knowledge hiding—the primary dependent variable here—was measured with a translated and adapted version from the 12-item scale by Connelly et al. (2012). Participants were asked how they would react in a specific situation when a colleague asked for knowledge such as expertise or data (e.g., “I would pretend not to have the information;” 6-point Likert scale ranging from

1) It is important to know that, in German, the words “researcher” (*Forscher*) and “scientist” (*Wissenschaftler*) are used synonymously: “*Wissenschaftler*” includes researchers from all disciplines and research areas.

1 = agree not at all to 6 = agree completely; Cronbach's $\alpha = .81$). As knowledge hiding might be regarded as a socially undesirable behavior, we used Satow's (2012) 7-item-scale assessing bias towards socially desirable questionnaire responses (e.g., "I have thought or talked badly about someone behind his/her back;" 4-point Likert scale ranging from 1 = does not apply at all to 4 = applies completely; Cronbach's $\alpha = .63$) to check for possible desirability effects. As a secondary dependent variable, we assessed participants' attitudes towards open science (see Abele-Brehm et al., 2019). After a short introduction to open science practices (e.g., preregistrations, open data, open materials), we asked participants how useful they thought the described practices were (i.e., "usefulness of OS") and how willing they were to apply them to their own work (i.e., "willingness to apply OS", 6-point Likert scales ranging from 1 = not at all to 6 = completely; Cronbach's $\alpha = .78$ for "usefulness of OS" and $\alpha = .81$ for "willingness to apply OS"). Finally, we measured participants' latent social identification as a "researcher" with 14 items adapted from Leach et al. (2008; e.g., "I am glad to be a scientist" or "I feel solidarity with scientists;" 6-point Likert scale ranging from 1 = do not agree at all to 6 = agree completely; Cronbach's $\alpha = .90$).²

Results and Discussion

Preliminary Analyses

First, the data were screened and cleansed according to pre-specified criteria. More specifically, we excluded six cases in which participants reported that doing research usually takes up less than 10% of their overall occupational activities and one case in which a participant gave implausible responses (e.g., the same answer on more than one questionnaire page). We conducted an *a priori* power analysis for the suspiciousness \times identity manipulation interaction effect, building on the finding that this manipulation had a medium-size effect in previous research ($d = .50$; see Haslam et al., 1999). In order to find a small- to medium-size interaction effect (i.e., $f^2 = .09$, which corresponds to an R^2 increase of .08) with a power of .80 and a 5% significance level, a total sample size of $N = 93$ is sufficient.

Next, we compared both groups (personal identity vs. social identity condition) with regard to participants' latent identification as "researchers" as well as their dispositional victim sensitivity, which did not show any significant differences ($p = .161$ for identification; $p = .646$ for victim sensitivity). Thus, this lack of differences suggests that there was no systematic dropout.

2) Note: This variable cannot be used as a manipulation check for our experimental manipulation because it was constructed to measure a trait, not a state.

Main Analyses

Table 1 shows means, standard deviations, and correlations for all variables. In line with our first hypothesis (i.e., dispositional fear of exploitation predicts knowledge hiding), victim sensitivity (VS) was positively and significantly correlated with knowledge hiding ($r = .33$, 95% CI for r [0.13, 0.50]). In addition, both variables were positively correlated with suspiciousness, the proposed mediator variable (VS: $r = .42$, 95% CI for r [0.24, 0.58]; knowledge hiding: $r = .32$, 95% CI for r [0.12, 0.49]). However, neither VS nor suspiciousness were related to participants' attitudes towards open science (neither to usefulness ratings nor to participants' self-reported willingness to apply open science practices). We will come back to this particular finding in the General Discussion. Here, we will only focus on knowledge hiding in the following analyses.

Table 1

Means, Standard Deviations, Correlations and Scale Reliabilities (Diagonal), Study 1

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Victim Sensitivity	3.73	0.88	.86						
2 Suspiciousness	2.31	0.78	.42**	.78					
3 Knowledge Hiding	1.59	0.58	.33**	.32**	.81				
4 Willingness to Apply OS	4.43	1.17	-.14	-.06	-.21*	.81			
5 Usefulness of OS	4.73	0.96	-.05	-.05	-.19	.81**	.78		
6 Social Desirability	2.53	0.48	-.09	.02	-.07	-.21*	-.31**	.63	
7 Social Identification	3.96	0.91	.14	-.03	.02	.08	.07	.10	.90

Note. $N = 93$. Cronbach's Alpha in italics.

* $p < .05$ (two-tailed). ** $p < .01$.

Next, we tested Hypothesis 2 (i.e., mediation via suspiciousness). We found a significant direct effect of VS on suspiciousness, $B = 0.38$, 95% CI for B [0.21, 0.55], a significant direct effect of suspiciousness on knowledge hiding, $B = 0.16$, 95% CI for B [0.00, 0.32], and a significant indirect effect of VS on knowledge hiding via suspiciousness, $B = 0.06$, 95% CI for B [0.00, 0.14].

To explore a moderating effect of personal vs. social identity, we specified a moderated mediation model and tested whether the effect of suspiciousness on knowledge hiding differed between the two experimental conditions. Again, social desirability was added as a covariate. As shown in Table 2, the suspiciousness \times identity activation interaction effect on knowledge hiding was statistically significant. Looking at the conditional effects (see Figure 1) revealed that suspiciousness predicted knowledge hiding only in the social identity condition, $B = 0.45$, 95% CI for B [0.23, 0.68], but not in the personal identity condition, $B = -0.03$, 95% CI for B [-0.21, 0.16]. In addition, the conditional indirect effect of VS on knowledge hiding via suspiciousness was significant in the social identity

condition, $B = 0.17$, 95% CI for B [0.06, 0.33], but not in the personal identity condition, $B = -0.01$, 95% CI for B [-0.07, 0.05]. These results suggest that activating a social identity as a “researcher” amplifies (rather than alleviates) the effect of VS via suspiciousness on knowledge hiding: victim-sensitive researchers became suspicious and, thus, were *more* likely to hide their knowledge when their social category of “researchers” (vs. their personal identity) was made salient.³

Table 2

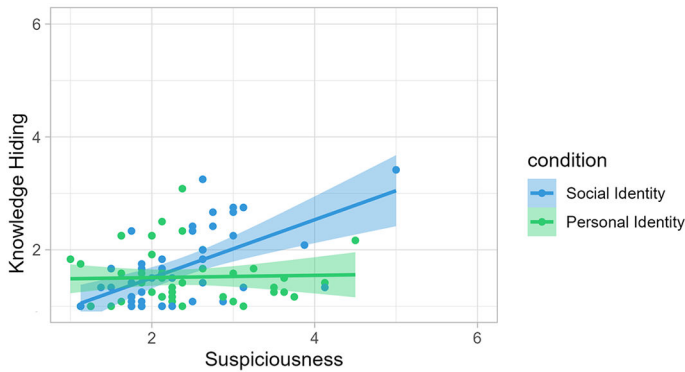
Moderated Mediation Model (Study 1): Effects on Knowledge Hiding

Predictor	B	t	p	95% CI	
				LL	UL
Constant	1.51	21.04	< .001	1.37	1.66
Victim Sensitivity	0.12	1.72	.089	-0.02	0.25
Suspiciousness	-0.03	-0.29	.771	-0.21	0.16
Activated Identity	0.15	1.42	.160	-0.06	0.36
Suspiciousness × Activated Identity	0.48	3.45	.001	0.20	0.76
Social Desirability	-0.11	-1.02	.310	-0.34	0.11

Note. $N = 93$. Activated Identity: social = 1, personal = 0. Victim sensitivity, suspiciousness, and social desirability were mean-centered. CI estimates based on 1,000 bootstrapped resamples.

Figure 1

Conditional Effects of Suspiciousness on Knowledge Hiding in Study 1



Note. Suspiciousness predicts knowledge hiding in the social, but not the personal identity condition (Study 1). Note that excluding the highly suspicious participant (suspiciousness = 5) in the social identity condition does not change the pattern of results in the moderated mediation model.

3) Including age and gender as covariates neither substantially increased the determination coefficient of the moderated mediation model (i.e., R^2 increased from .26 to .27) nor changed the pattern of results.

At first glance, our findings appear counterintuitive and at odds with previous findings (Balliet et al., 2014; Ellemers et al., 1997; Leach et al., 2008). Possibly, making the social category of “scientists” salient did not activate more trust, stronger norms to cooperate, and stronger expectations of reciprocity, but rather activated negative aspects associated with being a scientist, such as being competitive, egoistic, or ruthless (De Dreu et al., 1995; Schinske et al., 2015; Wellcome, 2020; Wyer et al., 2010), in line with self-stereotyping effects of activating a social identity (Shih et al., 1999; Sinclair et al., 2006). The activation of such negative self-stereotypes might have made suspicious researchers in our sample more willing to sacrifice prosocial scientific standards, such as knowledge sharing, for the sake of advancing their individual academic career (see Altenmüller & Gollwitzer, 2022).

Unfortunately, we did not assess any manipulation check measures to scrutinize this interpretation directly. This is why we decided to conduct a second study, in which we focused on the question of whether our experimental manipulation actually activated negative self-stereotypes among researchers.

Study 2

In this study, participants were also researchers who were randomly assigned to the same experimental manipulation that we used in Study 1: In the *personal identity* condition, they were asked to write down what they as an individual could do about two specific societal problems; in the *social identity* condition, they were asked what scientists like them could do about these problems. Next, participants were asked to describe themselves on a list of attributes (“Please state how you would assess yourself on the following items”, e.g. “cooperative”, 5-point Likert scale ranging from 1 = *does not apply at all* to 5 = *applies completely*). The list consisted of 20 items including 12 attributes extended from Asbrock (2010) to measure the two basic dimensions of social perceptions—warmth/communion (Cronbach’s $\alpha = .65$) and competence/agency (Cronbach’s $\alpha = .80$; Abele-Brehm & Wojciszke, 2018; Fiske et al., 2002), see Table 3—as well as 8 distractor items (e.g. “chaotic”). Stereotypical perceptions of researchers have been shown to map onto these two dimensions (e.g., Fiske & Dupree, 2014). Next, participants completed the same 14-item-measure we used in the main study to measure identification with “scientists” (Leach et al., 2008; Cronbach’s $\alpha = .84$). Last, they stated their scientific discipline and the amount of scientific work in their overall occupational activities.

Table 3*Self-Stereotyping Items, Their Means and Standard Deviations Split for Conditions, Study 2*

Factor	German wording	English translation	Personal Identity	Social Identity
1	<i>kompetitiv</i>	<i>competitive</i>	3.00 (0.93)	3.07 (0.99)
	<i>wettbewerbsorientiert</i>	<i>competition oriented</i>	2.86 (1.06)	2.78 (1.02)
	<i>konkurrenzfähig</i>	<i>able to compete</i>	3.42 (0.93)	3.35 (0.85)
	<i>ambitioniert</i>	<i>ambitious</i>	3.77 (1.07)	3.94 (0.83)
	<i>belastbar</i>	<i>resilient</i>	3.95 (0.82)	3.85 (0.90)
	<i>kompetent</i>	<i>competent</i>	3.98 (0.64)	3.81 (0.65)
	<i>eigenständig</i>	<i>independent</i>	4.28 (0.88)	4.48 (0.64)
2	<i>warmherzig</i>	<i>caring</i>	4.12 (0.88)	3.76 (1.01)
	<i>gutmütig</i>	<i>good natured</i>	4.05 (0.75)	4.00 (0.70)
	<i>kooperativ</i>	<i>cooperative</i>	4.40 (0.58)	4.24 (0.55)
	<i>fair</i>	<i>fair</i>	4.47 (0.51)	4.04 (0.67)
	<i>sympathisch</i>	<i>likeable</i>	4.00 (0.76)	3.81 (0.65)

Note. $N = 97$. Standard deviations in brackets.

The study was advertised via mailing lists in three large southern German universities / research facilities. One-hundred and eight participants completed the online survey. Applying the same criteria as in Study 1, we excluded 11 cases, which provided us with a final sample of 97 participants (52% female, 48% male) with a mean age of 34.79 years ($SD = 10.37$, ranging from 20 to 63). Most of the participating researchers came from the social sciences (24%), engineering (23%), the natural sciences (23%), and the humanities (16%). On average, participants estimated that doing research takes up 50–60% of their entire working time ($M = 5.58$, $SD = 2.71$, as in Study 1 on a 10-point scale). Thus, the present sample is comparable to the one in Study 1 and takes into account the diversity of academic disciplines. Further, just like in Study 1, participants' latent identification as "researchers" did not significantly differ between conditions ($p = .40$), indicating that there was no systematic dropout.

Results and Discussion

Self-stereotypes on Competence/Agency did not differ between the two experimental conditions, $t(95) = 0.05$, $p = .962$ (social identity: $M = 3.61$, $SD = 0.55$; personal identity: $M = 3.61$, $SD = 0.65$), while self-stereotypes on Warmth/Communion were significantly lower in the social identity condition ($M = 3.97$, $SD = 0.48$) compared to the personal identity condition ($M = 4.20$, $SD = 0.43$), $t(95) = -2.50$, $p = .014$, $d = 0.51$; 95% CI for d [0.10, 0.92]. Notably, participants' latent identification as a "researcher" correlated positively with self-ascribed Competence/Agency ($r = .28$; 95% CI for r [0.09, 0.45]), yet not with

Warmth/Communion ($r = .01$; 95% CI for r [-0.19, 0.21]). These two correlations were not significantly different from each other ($p = .062$, Meng et al., 1992).

Participants whose social identity as researchers was made salient described themselves as less warm, but equally competent compared to participants whose personal identity was made salient. This (indirectly) supports our interpretation that, in Study 1, suspicious scientists in the social identity condition might have been more inclined to hide their knowledge because this social identity activated a set of obstructive self-stereotypes. In other words, the reminder of being a member of the scientific community that incentivizes individual gain might make researchers less willing to share their knowledge with peers.

Study 3

To integrate the findings from the two previous studies and to replicate the results in a larger sample, we conducted a third study with an international sample of researchers. We used the same materials as in Studies 1 and 2 and translated them into English. Study 3 was preregistered (see [Supplementary Materials](#)).⁴ We conducted an *a priori* power analysis for a linear multiple regression for the effect of victim sensitivity (with further predictors suspiciousness and identity activation) on knowledge hiding. Based on the two previous studies, we assumed the suspiciousness \times identity activation interaction effect to be small, $\Delta R^2 = .04$. With a power of .90 and a 5% significance level, $N = 255$ cases are required to detect this effect. Anticipating exclusions (see above), we aimed to collect data from at least 300 participants. To reach a balanced sample (regarding disciplines and countries), we applied a systematic recruitment strategy: For this study, we focused on Western countries and contacted researchers from 42 European (i.e., Italy, France, Spain, United Kingdom, Germany), 21 US-American, 14 Canadian, and 6 Australian universities. From each university, we selected six departments (if possible) which represented a diverse range of disciplines (e.g., we contacted the departments of biophysics, electrical engineering, anesthesiology, humanities, mathematics, and political science at Yale university). We asked designated contact people at each department to distribute the questionnaire and, later, we also contacted individual researchers (if individual mail addresses were accessible on the websites; except in Germany, where the first distribution strategy was sufficient). In total, we contacted 9,895 individual researchers before reaching our predetermined sample size of 300 researchers who completed the questionnaire (see discussion on possible selection effects below). According

4) We piloted this study with a small sample of researchers via international mailings lists and community networks (e.g., Twitter) in order to solicit feedback and to test the international feasibility of our survey. However, this data is not reported in Study 3 as it was collected before the preregistration. If we combine pilot data and reported data, the pattern of results does not change.

to the pre-registered criteria, we excluded 12 participants who did not respond to the meanness cue or social identity manipulation and 15 participants who reported that their research activities were less than 10% of their overall occupational activities. One further participant was excluded due to missing values on the variables of interest. The final sample consisted of $N = 272$ participants (53% female, 46% male, 1% other) with a mean age of 44.61 years ($SD = 14.09$, ranging from 20 to 87). Most researchers came from Europe (60%; 32% Germany, 11% Spain, 7% Italy, 7% UK, 3% France), followed by 18% from Canada, 13% from Australia, and 9% from the USA. They were active in various disciplines (19% natural sciences, 7% engineering, 31% life sciences, 31% social sciences, 10% humanities, 2% other) and, as in Study 1 and 2, their scientific research activity, on average, made up about 50–60% of their total occupational activities ($M = 6.13$, $SD = 2.55$, as before on a 10-point scale).

Results and Discussion

Table 4 shows means, standard deviations, correlations, and scale reliabilities for all measured variables in Study 3. As in Study 1, VS was significantly correlated with knowledge hiding ($r = .18$, 95% CI for r [0.06, 0.29]) and the proposed mediator suspiciousness was positively correlated with VS ($r = .37$, 95% CI for r [0.26, 0.47]) as well as with knowledge hiding ($r = .44$, 95% CI for r [0.34, 0.53]). Importantly, neither participants' latent identification as "researchers" ($p = .977$) nor their dispositional victim sensitivity ($p = .313$) differed significantly between conditions, suggesting again that there was no systematic dropout.

Table 4

Means, Standard Deviations, Correlations, and Scale Reliabilities (Diagonal), Study 3

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1 Victim Sensitivity	3.64	1.03	.89								
2 Suspiciousness	2.24	0.83	.37**	.83							
3 Knowledge Hiding	1.51	0.57	.18*	.44**	.84						
4 Willingness to Apply OS	4.19	0.66	-.12	-.16**	-.21**	.67					
5 Usefulness of OS	4.18	0.62	-.11	-.21**	-.17*	.80**	.70				
6 Social Desirability	2.20	0.46	.11	-.08	.06	.01	.03	.60			
7 Social Identification	4.33	0.86	-.05	-.06	.06	.06	.08	-.07	.90		
8 Competency/Agency	4.36	0.78	.01	.01	-.04	.06	.04	-.04	.27**	.79	
9 Warmth/Communion	4.94	0.61	.03	-.08	-.10	.12*	.10	-.27**	.21**	.26**	.71

Note. $N = 272$. Cronbach's Alpha in italics.

* $p < .05$ (two-tailed). ** $p < .01$.

We specified the same moderated mediation model as in Study 1 (see Table 5). In line with our theorizing, victim sensitivity predicted suspiciousness across both experimen-

tal conditions, $B = 0.31$, 95% CI for B [0.22, 0.40]. In addition, suspiciousness had an unconditional effect on knowledge hiding, $B = 0.28$, 95% CI for B [0.16, 0.40], but the suspiciousness \times identity activation interaction effect on knowledge hiding was not significant, $B = 0.04$, 95% CI for B [-0.11, 0.19]. The indirect effect of VS on knowledge hiding via suspiciousness was significant both in the personal identity condition, $B = 0.09$, 95% CI for B [0.04, 0.15], and in the social identity condition, $B = 0.10$, 95% CI for B [0.06, 0.15].⁵

Table 5

Moderated Mediation Model (Study 3): Effects on Knowledge Hiding

Predictor	B	t	p	95% CI	
				LL	UL
Constant	1.48	33.34	< .001	1.39	1.56
Victim Sensitivity	0.00	0.12	.908	-0.06	0.07
Suspiciousness	0.28	4.77	< .001	0.16	0.40
Activated Identity	0.07	1.17	.243	-0.05	0.20
Suspiciousness \times Activated Identity	0.04	0.53	.594	-0.11	0.19
Social Desirability	0.12	1.68	.093	-0.02	0.25

Note. $N = 269$. Activated Identity: social = 1, personal = 0. Victim sensitivity, suspiciousness, and social desirability were mean-centered. CI estimates based on 1,000 bootstrapped resamples.

Next, we tested whether activating a social identity as a “researcher” (compared to activating a personal identity) increased participants’ obstructive self-stereotypes (as in Study 2) such as being uncooperative, competitive, etc. The experimental manipulation did not affect respondents’ self-ascribed Competency/Agency (personal identity: $M = 4.37$, $SD = 0.76$; social identity: $M = 4.34$, $SD = 0.79$) or Warmth/Communion (personal identity: $M = 4.92$, $SD = 0.58$; social identity: $M = 4.96$, $SD = 0.64$), $F(2, 267) = 0.14$, $p = .867$, Pillai’s $V < 0.01$.

We followed up with explorative analyses to investigate whether the results from Studies 1 and 2 might have been specific to German researchers. Within the German subsample ($N = 87$), the indirect effect of VS on knowledge hiding via suspiciousness was, in fact, only significant for the social identity condition, $B = 0.12$, 95% CI for B [0.05, 0.21], and not in the personal identity condition, $B = 0.06$, 95% CI for B [-0.01, 0.15], similar to the results in Study 1. However, this can only be treated descriptively as the suspiciousness \times identity activation interaction effect was not significant, $B =$

5) Including age, gender, continent, and discipline as covariates neither substantially increased the determination coefficient of the moderated mediation model (i.e., R^2 increased from .21 to .22) nor changed the pattern of results.

0.18, 95% CI for B [-0.11, 0.47]. Moreover, in this German subsample, we also did not replicate the results for obstructive self-stereotyping on either Competency/Agency (personal identity: $M = 4.16$, $SD = 0.77$; social identity: $M = 4.09$, $SD = 0.79$) or Warmth/Communion (personal identity: $M = 4.92$, $SD = 0.62$; social identity: $M = 4.96$, $SD = 0.73$), $F(2, 84) = 0.21$, $p = .815$, Pillai's $V < 0.01$. A visual inspection of the effects of the social identity manipulation on knowledge hiding at different values of suspiciousness (i.e., the moderated mediation effect) separated by countries (Figure S1) suggests that the different results in Studies 1 vs. 3 may be related to sample-specific (e.g., cultural) characteristics. Further, such a visual inspection separated by academic discipline (Figure S2) also points towards possible moderation by academic culture (see [Supplementary Materials](#) for Figures S1 and S2). Thus, the effect of the social identity manipulation seems to be context-dependent.

General Discussion

Knowledge hiding is problematic, not only for the private economy, but also in academia. One might say that knowledge hiding in the scientific domain is even more problematic because science should be all about acquiring, scrutinizing, and disseminating knowledge. If scientists were inclined to hide what they know from their peers, then accumulating scientific knowledge would be impossible and instead of maximizing the collective effort of discovering the truth, science would merely produce unconnected, insular, and probably non-replicable single effects. Our findings suggest that a dispositional fear of being exploited ("victim sensitivity") might be one risk factor for knowledge hiding in science when certain contextual cues trigger suspicion: researchers high in victim sensitivity are more likely to hide their knowledge from their peers, and this effect seems to be mediated by suspiciousness about their peers and their respective intentions.

Due to the cross-sectional nature of our data, we cannot rule out alternative explanations (e.g., that a broader personality trait, such as neuroticism or interpersonal distrust, is actually responsible for the observed effects). That said, our findings are in line with theoretical considerations and empirical evidence on the SeMI model (Gollwitzer & Rothmund, 2009; Gollwitzer et al., 2013). According to this model, victim-sensitive individuals harbor a latent fear of being exploited, and whenever they are confronted with contextual cues suggesting that their interaction partners might have malevolent intentions, victim-sensitive individuals immediately ("pre-emptively") withdraw their willingness to cooperate. Our findings are relevant for this research on victim sensitivity: Victim sensitivity was originally developed to measure the extent to which being treated unjustly makes one feel angry, outraged, or frustrated (as reflected by its measurement scale). However, we demonstrate that, despite this being something quite different, it can also predict researchers' inclination to withhold or conceal information from their peers (i.e., knowledge hiding). Thereby, our studies also extend other research showing that

victim sensitivity can predict people's behaviors in trust games (Gollwitzer & Rothmund, 2011; Rothmund et al., 2011), public goods games (Gollwitzer et al., 2009), or ultimatum games (Fetchenhauer & Huang, 2004). In this regard, our findings also contribute to the knowledge hiding literature, in which personality traits have only recently been put into focus in systematic investigations, or, as with justice-related traits, have still been largely ignored (Arshad & Ismail, 2018; Demirkasimoglu, 2015; He et al., 2021; Pan et al., 2018).

Of course, the association between victim sensitivity and knowledge hiding might be explained by other confounded variables. For example, both victim sensitivity and knowledge hiding are related to interpersonal distrust (Connelly et al., 2012; Schmitt et al., 2005) and neuroticism (Schmitt et al., 2005; Wu, 2021). That said, previous research also suggests that effects of victim sensitivity cannot be fully explained by neuroticism or interpersonal distrust (e.g., Schmitt et al., 2010). In addition, victim sensitivity—as a narrower trait than interpersonal distrust or neuroticism—allows for more specific assumptions regarding the cognitive processes involved: Unlike generally distrustful individuals, people high in victim sensitivity do not *always* behave uncooperatively, but only if they perceive a risk of being exploited by others (as demonstrated here by the mediation via suspiciousness; Gollwitzer & Rothmund, 2011; Rothmund et al., 2011). While we cannot rule out the influence of third variables in this study, victim sensitivity still demonstrated its predictive utility in dilemma situations like knowledge sharing/hiding.

From a more application-oriented perspective, our data suggest that knowledge hiding is relatively rare in academia. Looking at the low means on our knowledge hiding measure in Studies 1 (1.57 on a scale from 1–6) and 3 (1.82 on the same scale), the problem does not appear to be a big one—particularly when considering that participants' suspiciousness was triggered in these studies before knowledge hiding was assessed. However, our mean values may also underestimate the true prevalence of knowledge hiding in science for two reasons: First, we relied on self-report measures, which are usually biased due to social desirability and impression management effects (which is why we controlled for social desirability in our studies); second, our sample cannot be considered representative of the entire scientific community. In fact, we had a hard time finding enough participants for our studies, and those researchers who were willing to complete our survey might also be those who are, in general, less victim sensitive, less suspicious about their peers, and more cooperative and, thus, less likely to hide their knowledge. Especially the very low response rate in Study 3 (only 3% of contacted researchers completed the short questionnaire to which they were directly invited via e-mail) renders a selection bias likely. Against this background, it is even more notable that we were able to find the hypothesized effect of victim sensitivity on knowledge hiding via suspiciousness.

Further, our samples were rather—yet not exclusively—young (especially in Study 1 and Study 2), likely consisting of many early career researchers. The academic career

level might play a role for suspiciousness about one's peers and knowledge hiding. For example, researchers who are still working on gaining a tenured position might be more inclined to be suspicious about their peers and hide knowledge due to perceiving a strong "publish or perish" pressure. However, considering the researchers' age (as proxy for career level) did not uncover changes in the pattern of results in the present studies. Future research might further scrutinize the moderating role of perceived power structures and underlying motives for academic knowledge hiding. For example, low-status researchers might also engage in more knowledge sharing to strategically signal their competence to their high-status peers (e.g., van Leeuwen & Täuber, 2011).

We also investigated whether activating a social identity of being a "researcher" would amplify or rather alleviate the effect of suspiciousness on knowledge hiding. Regarding this question, our findings were mixed: in Study 1, we found that activating respondents' social identity as a "researcher" amplified (rather than alleviated) the indirect effect of victim sensitivity via suspiciousness on knowledge hiding. In Study 2, we found evidence for the notion that making respondents' social identity salient activated obstructive self-stereotypes (Study 2). That said, we failed to find this effect in Study 3. It is possible that the effect of activating the social identity as a "researcher" on knowledge hiding is culture-specific (e.g., country or academic discipline). However, in the present paper, we can only conclude that the moderating effects of social identity on knowledge hiding are, at best, ambivalent. Notably, across three studies, we find that this social identity manipulation, which had been shown to have positive effects in prior research (Haslam et al., 1999), can also activate obstructive self-stereotypes and uncooperative behavior, at least among German researchers. This has implications for the psychological understanding of mechanisms and effects of identity activation. Future research needs to look into this in more detail. Further, the manipulation of social identity in our study was rather subtle by asking participants to generate ideas either as an individual or as a scientist and we cannot rule out that other manipulations might have different effects on norm activation and, thus, knowledge hiding (e.g., McLeish & Oxoby, 2011; Reed, 2004). Moreover, adding a control group without any identity activation might further help to understand the effects of our manipulations. For example, we cannot rule out that, actually, both identity conditions (personal and social) somewhat decreased suspiciousness compared to a neutral state (and, in Study 1, the personal identity condition just did so more effectively). While still at odds with other research findings regarding the ingroup benefits of activating a social versus personal identity, this case would not question the general idea that social identity can increase trust and cooperation.

Although knowledge hiding was the primary dependent variable in our study, we also measured participants' attitudes towards "open science" by asking them (1) whether they think open science practices are useful (based on Abele-Brehm et al., 2019) and (2) whether they were willing to commit to open science practices themselves. Participants who reported more knowledge hiding rated open science practices as less useful and

were also less willing to engage in these practices themselves. This is unsurprising, considering many aspects of open science are forms of knowledge *sharing*. Notably, victim sensitivity was not related to any of these measures, but, in Study 3, we found that suspiciousness correlated negatively with perceived usefulness and willingness to commit to these practices. In addition, when exploratorily running the same moderated mediation models as for knowledge hiding (see [Supplementary Tables](#)), only a significant effect of suspiciousness on usefulness perceptions emerged in Study 3. This might be due to the fact that open science can only work well when researchers are willing to trust each other to cooperate and not exploit each other's efforts (i.e., a social dilemma; [Altenmüller & Gollwitzer, 2022](#)). Thus, suspicious researchers might doubt the usefulness of engaging in such practices. Paradoxically, one could also argue that open science is especially needed when researchers do *not* trust each other. For example, increasing transparency (which open science practices typically target) can be considered one common strategy to restore trust (e.g., [Wingen et al., 2020](#)). Whether “doing” open science (instead of merely looking at attitudes, as operationalized here) can also improve suspicious researchers' trust in their colleagues is a question for further research.

Apart from the open science movement, evidence on self-stereotyping was mixed in this research program. However, findings from Study 2 clearly emphasize that more research on (self-)stereotypes about being a “researcher” is needed to better understand how such self-stereotyping might impact researchers' professional behavior. Our results suggest that for some subpopulations, making the social identity of being a “researcher” salient activates obstructive warmth-related stereotypes (such as being uncooperative, cold, egoistic). Such self-stereotyping is not only counterproductive for scientific collaboration, but also harmful for researchers themselves (e.g., [Ellemers, 2021](#); [Wellcome, 2020](#)): working in an inclusive and sharing work climate and exchanging knowledge with fellow scientists might have protective functions for work-related stressors, while conforming to an antisocial and overly competition-oriented prototype of the scientific profession could hinder scientists from engaging with their colleagues and take a toll on their mental health.

Conclusion

Knowledge hiding is only one form of detrimental behavior among researchers. Scientific collaboration approaches like the “open science” movement might be one promising way out of an uncooperative and competitive climate in academia and towards better research and more reliable results. Our findings suggest that we may need to change the stereotypical way we think about ourselves as researchers to build trust and a sharing environment among scientists. Identifying as a researcher should include being cooperative, other-oriented, and trustworthy: A social identity that stands for knowledge sharing – not knowledge hiding.

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Data Availability: For this article, data is freely available (Altenmüller, Fligge, & Gollwitzer, 2021).

Supplementary Materials

For this article, all study materials as summarized by the procedure in Study 3, anonymized data and analysis scripts for all three studies, preregistration for Study 3, and supplementary figures (S1 and S2) as well as supplementary tables are accessible online (for access see [Index of Supplementary Materials](#) below).

Index of Supplementary Materials

Altenmüller, M. S., Fligge, M., & Gollwitzer, M. (2021). *Among us: Fear of exploitation, suspiciousness, and social identity predict knowledge hiding among researchers* [Data, scripts, study materials, supplementary figures and tables]. OSF. <https://osf.io/z9vfp>

Altenmüller, M. S., & Gollwitzer, M. (2021). *We the researchers: Fear of exploitation, suspiciousness, and social identity predict knowledge hiding among researchers* [Pre-registration Study 3]. OSF Registries. <https://doi.org/10.17605/osf.io/eh42r>

References

- Abele-Brehm, A., & Wojciszke, B. (2018). *The agency—communion framework*. Routledge.
- Abele-Brehm, A. E., Gollwitzer, M., Steinberg, U., & Schönbrodt, F. D. (2019). Attitudes toward open science and public data sharing. *Social Psychology, 50*(4), 252–260. <https://doi.org/10.1027/1864-9335/a000384>
- Altenmüller, M. S., & Gollwitzer, M. (2022). Prosociality in science. *Current Opinion in Psychology, 43*, 284–288. <https://doi.org/10.1016/j.copsyc.2021.08.011>
- Arshad, R., & Ismail, I. R. (2018). Workplace incivility and knowledge hiding behavior: Does personality matter? *Journal of Organizational Effectiveness: People and Performance, 5*(3), 278–288. <https://doi.org/10.1108/JOEPP-06-2018-0041>

- Asbrock, F. (2010). Stereotypes of social groups in Germany in terms of warmth and competence. *Social Psychology, 41*(2), 76–81. <https://doi.org/10.1027/1864-9335/a000011>
- Babcock, P. (2004, January 5). *Shedding light on knowledge management*. SHRM. <https://www.shrm.org/hr-today/news/hr-magazine/pages/0504covstory.aspx>
- Balliet, D., Wu, J., & De Dreu, C. K. W. (2014). Ingroup favoritism in cooperation: A meta-analysis. *Psychological Bulletin, 140*(6), 1556–1581. <https://doi.org/10.1037/a0037737>
- Cabrera, A., & Cabrera, E. F. (2002). Knowledge-sharing dilemmas. *Organization Studies, 23*(5), 687–710. <https://doi.org/10.1177/0170840602235001>
- Carson, L., Bartneck, C., & Voges, K. (2013). Over-competitiveness in Academia: A literature review. *Disruptive Science and Technology, 1*(4), 183–190. <https://doi.org/10.1089/dst.2013.0013>
- Černe, M., Nerstad, C. G. L., Dysvik, A., & Škerlavaj, M. (2013). What goes around comes around: Knowledge hiding, perceived motivational climate, and creativity. *Academy of Management Journal, 57*(1), 172–192. <https://doi.org/10.5465/amj.2012.0122>
- Connelly, C. E., Zweig, D., Webster, J., & Trougakos, J. P. (2012). Knowledge hiding in organizations. *Journal of Organizational Behavior, 33*(1), 64–88. <https://doi.org/10.1002/job.737>
- De Dreu, C. K. W., Dussel, D. B., & Velden, F. S. T. (2015). In intergroup conflict, self-sacrifice is stronger among pro-social individuals, and parochial altruism emerges especially among cognitively taxed individuals. *Frontiers in Psychology, 6*, Article 572. <https://doi.org/10.3389/fpsyg.2015.00572>
- De Dreu, C. K. W., Yzerbyt, V. Y., & Leyens, J.-P. (1995). Dilution of stereotype-based cooperation in mixed-motive interdependence. *Journal of Experimental Social Psychology, 31*(6), 575–593. <https://doi.org/10.1006/jesp.1995.1026>
- Demirkasimoglu, N. (2015). Knowledge hiding in academia: Is personality a key factor? *International Journal of Higher Education, 5*(1), 128–140. <https://doi.org/10.5430/ijhe.v5n1p128>
- Ellemers, N. (2021). Science as collaborative knowledge generation. *British Journal of Social Psychology, 60*(1), 1–28. <https://doi.org/10.1111/bjso.12430>
- Ellemers, N., Spears, R., & Doosje, B. (1997). Sticking together or falling apart: In-group identification as a psychological determinant of group commitment versus individual mobility. *Journal of Personality and Social Psychology, 72*(3), 617–626. <https://doi.org/10.1037/0022-3514.72.3.617>
- Fetchenhauer, D., & Huang, X. (2004). Justice sensitivity and distributive decisions in experimental games. *Personality and Individual Differences, 36*(5), 1015–1029. [https://doi.org/10.1016/S0191-8869\(03\)00197-1](https://doi.org/10.1016/S0191-8869(03)00197-1)
- Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*(6), 878–902. <https://doi.org/10.1037/0022-3514.82.6.878>
- Fiske, S. T., & Dupree, C. (2014). Gaining trust as well as respect in communicating to motivated audiences about science topics. *Proceedings of the National Academy of Sciences, 111*(Suppl 4), 13593–13597. <https://doi.org/10.1073/pnas.1317505111>

- Gerlach, T. M., Allemand, M., Agroskin, D., & Denissen, J. J. A. (2012). Justice sensitivity and forgiveness in close interpersonal relationships: The mediating role of mistrustful, legitimizing, and pro-relationship cognitions: justice sensitivity and forgiveness. *Journal of Personality, 80*(5), 1373–1413. <https://doi.org/10.1111/j.1467-6494.2012.00762.x>
- Gollwitzer, M., Magraw-Mickelson, Z., Vollan, B., & Süssenbach, P. (2021). Victim sensitivity in groups: When is one a detriment to all? *Journal of Theoretical Social Psychology, 5*(1), 3–13. <https://doi.org/10.1002/jts5.76>
- Gollwitzer, M., & Rothmund, T. (2009). When the need to trust results in unethical behavior: The sensitivity to mean intentions (SeMI) model. In D. De Cremer (Ed.), *Psychological perspectives on ethical behavior and decision making* (pp. 135–152). Information Age Publishing.
- Gollwitzer, M., & Rothmund, T. (2011). What exactly are victim-sensitive persons sensitive to? *Journal of Research in Personality, 45*(5), 448–455. <https://doi.org/10.1016/j.jrp.2011.05.003>
- Gollwitzer, M., Rothmund, T., Pfeiffer, A., & Ensenbach, C. (2009). Why and when justice sensitivity leads to pro- and antisocial behavior. *Journal of Research in Personality, 43*(6), 999–1005. <https://doi.org/10.1016/j.jrp.2009.07.003>
- Gollwitzer, M., Rothmund, T., & Süssenbach, P. (2013). The Sensitivity to Mean Intentions (SeMI) model: Basic assumptions, recent findings, and potential avenues for future research: Sensitivity to mean intentions. *Social and Personality Psychology Compass, 7*(7), 415–426. <https://doi.org/10.1111/spc3.12041>
- Haslam, S. A., Oakes, P. J., Reynolds, K. J., & Turner, J. C. (1999). Social identity salience and the emergence of stereotype consensus. *Personality and Social Psychology Bulletin, 25*(7), 809–818. <https://doi.org/10.1177/0146167299025007004>
- He, P., Jiang, C., Xu, Z., & Shen, C. (2021). Knowledge hiding: Current research status and future research directions. *Frontiers in Psychology, 12*, Article 748237. <https://doi.org/10.3389/fpsyg.2021.748237>
- Leach, C. W., van Zomeren, M., Zebel, S., Vliek, M. L. W., Pennekamp, S. F., Doosje, B., Ouwerkerk, J. W., & Spears, R. (2008). Group-level self-definition and self-investment: A hierarchical (multicomponent) model of in-group identification. *Journal of Personality and Social Psychology, 95*(1), 144–165. <https://doi.org/10.1037/0022-3514.95.1.144>
- Maltese, S., Baumert, A., Schmitt, M. J., & MacLeod, C. (2016). How victim sensitivity leads to uncooperative behavior via expectancies of injustice. *Frontiers in Psychology, 6*, Article 2059. <https://doi.org/10.3389/fpsyg.2015.02059>
- McLeish, K. N., & Oxoby, R. J. (2011). Social interactions and the salience of social identity. *Journal of Economic Psychology, 32*(1), 172–178. <https://doi.org/10.1016/j.joep.2010.11.003>
- Meng, X., Rosenthal, R., & Rubin, D. B. (1992). Comparing correlated correlation coefficients. *Psychological Bulletin, 111*, 172–175. <https://doi.org/10.1037/0033-2909.111.1.172>
- Otten, S. (2016). The Minimal Group Paradigm and its maximal impact in research on social categorization. *Current Opinion in Psychology, 11*, 85–89. <https://doi.org/10.1016/j.copsyc.2016.06.010>

- Pan, W., Zhang, Q., Teo, T. S. H., & Lim, V. K. G. (2018). The dark triad and knowledge hiding. *International Journal of Information Management*, 42, 36–48.
<https://doi.org/10.1016/j.ijinfomgt.2018.05.008>
- Reed, A. (2004). Activating the self-importance of consumer selves: Exploring identity salience effects on judgments. *Journal of Consumer Research*, 31(2), 286–295.
<https://doi.org/10.1086/422108>
- Rothmund, T., Gollwitzer, M., & Klimmt, C. (2011). Of virtual victims and victimized virtues: Differential effects of experienced aggression in video games on social cooperation. *Personality and Social Psychology Bulletin*, 37(1), 107–119. <https://doi.org/10.1177/0146167210391103>
- Satow, D. L. (2012). *Skala zur Erfassung von Testverfälschung durch positive Selbstdarstellung und sozialerwünschte Antworttendenzen (SEA)*. Leibniz-Zentrum für Psychologische Information und Dokumentation (ZPID), Elektronisches Testarchiv.
<https://doi.org/10.23668/psycharchives.417>
- Schinske, J., Cardenas, M., & Kaliangara, J. (2015). Uncovering scientist stereotypes and their relationships with student race and student success in a diverse, community college setting. *CBE—Life Sciences Education*, 14(3), Article ar35. <https://doi.org/10.1187/cbe.14-12-0231>
- Schmitt, M., Baumert, A., Gollwitzer, M., & Maes, J. (2010). The Justice Sensitivity Inventory: Factorial validity, location in the personality facet space, demographic pattern, and normative data. *Social Justice Research*, 23(2–3), 211–238. <https://doi.org/10.1007/s11211-010-0115-2>
- Schmitt, M., Gollwitzer, M., Maes, J., & Arbach, D. (2005). Justice sensitivity. *European Journal of Psychological Assessment*, 21(3), 202–211. <https://doi.org/10.1027/1015-5759.21.3.202>
- Shih, M., Pittinsky, T. L., & Ambady, N. (1999). Stereotype susceptibility: Identity salience and shifts in quantitative performance. *Psychological Science*, 10(1), 80–83.
<https://doi.org/10.1111/1467-9280.00111>
- Sinclair, S., Hardin, C. D., & Lowery, B. S. (2006). Self-stereotyping in the context of multiple social identities. *Journal of Personality and Social Psychology*, 90, 529–542.
<https://doi.org/10.1037/0022-3514.90.4.529>
- Süssenbach, P., Gollwitzer, M., Mieth, L., Buchner, A., & Bell, R. (2016). Trustworthy tricksters: Violating a negative social expectation affects source memory and person perception when fear of exploitation is high. *Frontiers in Psychology*, 7, Article 2037.
<https://doi.org/10.3389/fpsyg.2016.02037>
- Tanis, M., & Postmes, T. (2005). A social identity approach to trust: Interpersonal perception, group membership and trusting behaviour. *European Journal of Social Psychology*, 35(3), 413–424.
<https://doi.org/10.1002/ejsp.256>
- van Leeuwen, E., & Täuber, S. (2011). Demonstrating knowledge: The effects of group status on outgroup helping. *Journal of Experimental Social Psychology*, 47(1), 147–156.
<https://doi.org/10.1016/j.jesp.2010.09.008>
- Vohs, K. D., Baumeister, R. F., & Chin, J. (2007). Feeling duped: Emotional, motivational, and cognitive aspects of being exploited by others. *Review of General Psychology*, 11(2), 127–141.
<https://doi.org/10.1037/1089-2680.11.2.127>

Wellcome. (2020). *What researchers think about the culture they work in.*

<https://wellcome.org/sites/default/files/what-researchers-think-about-the-culture-they-work-in.pdf>

Wingen, T., Berkessel, J. B., & Englich, B. (2020). No replication, no trust? How low replicability influences trust in psychology. *Social Psychological and Personality Science*, 11(4), 454–463.

<https://doi.org/10.1177/1948550619877412>

Wu, J. (2021). Impact of personality traits on knowledge hiding: A comparative study on technology-based online and physical education. *Frontiers in Psychology*, 12, Article 791202.

<https://doi.org/10.3389/fpsyg.2021.791202>

Wyer, M., Schneider, J., Nassar-McMillan, S., & Oliver-Hoyo, M. (2010). Capturing stereotypes: Developing a scale to explore U.S. college students' images of science and scientists.

International Journal of Gender, Science and Technology, 2(3), 381–415.

<http://genderandset.open.ac.uk/index.php/genderandset/article/view/78>

Yamagishi, T., & Kiyonari, T. (2000). The group as the container of generalized reciprocity. *Social Psychology Quarterly*, 63(2), 116–132. <https://doi.org/10.2307/2695887>

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