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Does the First Step of the Induced-Hypocrisy Paradigm Really Matter?

An Initial Investigation using a Meta-Analytic Approach

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Abstract

The induced-hypocrisy paradigm is an effective two-step procedure – the behavioral standards salience step and the transgressions salience step - for encouraging normative behaviors. Recent findings have raised questions about the necessity of the first step in inducing behavioral change. This research aims to test the role of the standards salience step in the hypocrisy paradigm. To this end, we used a meta-analytic approach to test the moderation of standards salience on hypocrisy effect sizes. We compared 16 studies with "strong" standards salience to 19 studies with "weak" standards salience. The results revealed that, compared to control and transgressions-only conditions, the hypocrisy effect sizes were moderate in the "strong" standards group and weak or non-significant in the "weak" standards group. These results contribute to the further investigation of the processes underlying the hypocrisy paradigm and represent progress by identifying the optimal conditions for implementing its first step.

Keywords

induced hypocrisy, behavioral standards salience, intention, behavior, social norm

Does the First Step of the Induced-Hypocrisy Paradigm Really Matter?

An Initial Investigation using a Meta-Analytic Approach

The induced-hypocrisy paradigm (IHP, Aronson et al., 1991) is an efficient cognitive dissonance paradigm for encouraging normative behaviors in many fields (e.g., recycling waste, condom use, reducing binge drinking, observing driving regulations, see Liégeois et al., 2017 for a review). Initially, this paradigm consists of a two-step procedure. In the first step, people are generally asked to support a pro-social behavior (e.g., the importance of recycling waste). In the second step, people are asked to recall their own past failures to comply with the behavior (Stone & Fernandez, 2008). People's perception of the discrepancy between the pro-social behavior and their own past transgressive behaviors generates the hypocrisy effect, leading them to adopt (or intend to adopt) future behaviors in line with the pro-social behavior. A recent meta-analysis conducted by Priolo et al. (2019) drew attention to the effectiveness of the IHP in promoting behavioral change. The findings revealed a medium effect size for the hypocrisy procedure in relation to both behavioral intention (r = .35, 95% CI [.22, .46]) and actual behavior (r = .30, 95% CI [.10, .48]). However, this meta-analysis questions the importance – and therefore the need – to perform the two steps of the IHP to achieve this behavioral change. Indeed, one of the findings indicated that the incremental benefit of using the complete hypocrisy procedure, performing both steps, compared to solely implementing the transgressions-only procedure (i.e., performing only the second step of the IHP) was minimal and statistically non-significant (r = .18, 95% CI [-.04, .35]). In other words, performing the first step before the second one would not be essential to obtain hypocrisy effects. Although we do not question the results achieved by Priolo et al. (2019), we note that they challenge the dominant and consensual theoretical explanation of the hypocrisy effect (Stone & Fernandez, 2008), which attaches importance to this first step in the production of the hypocrisy effect. Therefore, we propose in this study to explain why this step has had a weaker role than expected.

To this end, we consider that its operationalization, which was not always optimal across studies, would have weakened its impact on behavioral change. Thus, this study aims to test, through the precise examination of its implementation in prior research and employing a meta-analytic approach, whether the first step of the IHP contributes to the generation of the hypocrisy effect.

While researchers agreed very quickly on the name to be given to the second step of the IHP (i.e., transgressions recall step), it must be noted that they had difficulty agreeing on how to name its first step. Since the creation of the IHP in 1991, this first step has resulted in various different wordings, even in the original research: “preach” for the first study (e.g., Aronson et al., 1991), “commitment” for the second study (e.g., Dickerson et al, 1992), “pro-attitudinal advocacy” for the third study (e.g., Stone et al., 1994), “normative commitment” (e.g., Martinie & Fointiat, 2010), “normative salience” (e.g., Priolo & Liégeois, 2008), or “norm” (e.g., Odou et al., 2019). Table S1 (see supplementary materials) summarizes the different names given to this first step. Perhaps even more important than these different names, these latter also translate into different operationalizations of the first step: advocacy in the form of a speech or essay in favor of performing a behavior (e.g., Fried, 1998), the signing of a petition (e.g., Dickerson et al., 1992), or the reading of a message making salient the injunctive social norm related to the behavior (e.g., Priolo & Liégeois, 2008, Study 2).

In the original version of the paradigm (Aronson et al., 1991), the essence of the first step was to get someone to perform a committing behavior (e.g., advocacy), making salient the attitude of the participant. However, it must be noted that this step makes salient constructs other than the attitude (e.g., injunctive norms, Priolo & Liégeois, 2008, study 2). Moreover, performing a behavior does not seem to be a necessary element for obtaining a hypocrisy effect, since simply operationalizing this step by reading a text that makes the injunctive social norm salient generates the hypocrisy effect (e.g., Priolo et al., 2016). Despite these different names

and operationalizations, a common denominator would be found in the function and role of this first induced-hypocrisy step, on which researchers agree.

Although the initial theoretical explanation of the IHP did not focus on the first step, a more recent explanation, gaining consensus among researchers, has emphasized its role and function in the hypocrisy effect. According to the original explanation, based on the theory of self-consistency (Aronson, 1999), the hypocrisy effect would only be driven to restore self-concept threatened by the recall of past transgressions. Currently, the theoretical explanation of the hypocrisy effect, which is consensual, is based on the self-standards model of dissonance (SSM, Stone & Cooper, 2001; Stone & Fernandez, 2008). This model gives an important role to this first step. According to the SSM, the hypocrisy effect is caused by the inconsistency between a past transgressive behavior (step two of the IHP) and a standard of judgment related to this behavior (i.e., behavioral standards). The standard is made salient during the first step of the IHP. The SSM considers behavioral standards to be either normative or personal. A normative standard is defined as *"normative considerations of what is good or bad, foolish or sensible, moral or immoral"* (Stone & Cooper, 2001, p. 4) namely injunctive norms related to the behavior. Personal standards are *"personal considerations of what is good, foolish, and moral"* (Stone & Cooper, 2001, p. 4), namely personal norms related to the behavior. Thus, the hypocrisy effect would be caused by the inconsistency between behavioral standards (either normative or personal), made salient to the individual in the first IHP step, and the transgressions of these standards, made salient in the second step (Stone & Fernandez, 2008). This is why researchers agree that the function of the first step of the IHP is to make the behavior-related standards salient (Liégeois et al., 2017; Stone & Fernandez, 2008). Based on this function of the first step, which we can refer to as "behavioral standards salience", researchers have recommended two optimal ways of operationalizing it, that cannot always be found in its many operationalizations.

According to the SSM, two paths can lead to the hypocrisy effect, one through normative standards, the other through personal standards, depending on what type of standards are made salient in the first step (Stone & Fernandez, 2008). The first path would be taken when the injunctive social norm related to the behavior is made salient. Consequently, researchers recommend making the injunctive norm associated with the behavior directly salient (Liégeois et al., 2017; Stone & Fernandez, 2008). For example, Priolo & Liégeois (2008, Study 2) had participants read an anti-smoking prevention message, which rendered the anti-smoking norm salient. The second path would be taken when people make a personal commitment to the behavior. Most studies ask participants to perform advocacy for a normative behavior (e.g., Aronson et al., 1991; Eitel & Friend, 1999), but Stone & Fernandez (2008) recommend, in order to carry out this step optimally, that researchers strongly commit participants to the behavior. This can be done by asking participants to implement three commitment factors (Kiesler, 1971), namely (1) performing an advocacy (i.e., task performance), (2) making the step public (i.e., publicness; e.g., signing a flyer, Dickerson et al., 1992;), and (3) emphasizing the consequences of this step (e.g., constructing awareness campaigns, Fointiat et al., 2011; Fried, 1998, study 2). Nevertheless, our review of the literature shows that many studies did not implement the three commitment factors (e.g., Pelt, 2017, study 0, Sénémeaud et al., 2014; Thorman et al., 2020, study 1). In sum, two recommendations have been made for implementing the first "behavioral standards salience" step, namely (i) making the injunctive social norm related to the behavior salient or (ii) obtaining the strong personal commitment of the participants to the behavior, which previous studies have not always followed. Therefore, studies that followed these recommendations, that consisted of making standards salient, could lead to a greater hypocrisy effect than studies that did not fully follow these recommendations, meaning that they made these standards salient to a lesser extent. Thus, this research aims to test, using a meta-analytic approach, the moderating effect of the strength of behavioral standards salience by comparing

studies based on whether they emphasized behavioral standards "weakly" or "strongly". This is one original way to examine the influence of the first step in eliciting the hypocrisy effect.

To this end, we propose to classify previous IHP studies into two categories, depending on whether or not each study followed researchers' recommendations for optimally performing the behavioral standards salience step. The first group, named "strong standards salience", includes studies whose procedures either (i) specifically made the injunctive social norm related to the behavior salient or (ii) generated a strong commitment to the behavior by combining the three commitment factors (i.e., task, publicness, and consequences, Hammons, 2010). The second group, named "weak standards salience", includes the other IHP studies that did not directly make the norm salient and did not implement all three commitment factors (i.e., task, publicness, and consequences, e.g., Fointiat et al., 2008). Based on these elements, we hypothesize that the effect size of the hypocrisy procedure (i.e., completion of both IHP steps), when compared to a control condition (i.e., none of the two IHP steps), would be stronger for the "strong standards salience" group than for the "weak standards salience" group (hypothesis 1). Second, we hypothesize that the hypocrisy procedure would only be more effective than the transgressions-only step, in cases where the first step is performed well. More precisely, we expect that the effect size of hypocrisy, when comparing it to a transgressions-only condition, would only be significant for the "strong standards salience" group but not for the "weak standards salience" group (hypothesis 2).

Method

Literature search

Our corpus was taken from the recent meta-analysis conducted on the hypocrisy effect (Priolo et al., 2019). The same keywords were used, namely "hypocrisy" (subject term) and "cognitive dissonance" (full text). However, this search ended in February 2017, so we

completed this corpus based on a search of 15 databases[1] conducted up to July 2021. In the end, we identified 102 references covering the period between 1984 and 2021 (see Priolo et al., 2019, for proof of the start of this period).

Inclusion and Exclusion Criteria

Meta-analysis is meant to incorporate similar or comparable studies (Higgins et al., 2003). Since our meta-analysis aimed to determine the role of standard salience in the hypocrisy effect, we established strict inclusion and exclusion criteria.

Firstly, we only included articles referring to the IHP. We excluded studies involving other paradigms (e.g., Barden et al., 2005; Carlos & Lewis, 2018; Kim et al., 2021), such as induced compliance, moral hypocrisy, and vicarious hypocrisy. Secondly, we excluded articles that did not involve empirical research, such as literature reviews and meta-analyses (e.g., Liégeois et al., 2017; Priolo et al., 2019). Thirdly, we included studies dealing with the full hypocrisy procedure (i.e., including both steps) to test our hypothesis. Fourthly, we excluded studies with no control condition (e.g., studies using a standard salience step condition as control, Fried & Aronson, 1995) to test our first hypothesis. We also excluded studies with no transgressions-only condition to test our second hypothesis. Fifthly, we focused on experiments and studies providing adequate statistical information for computing an effect size. We attempted to contact the authors when data were missing. We excluded the articles that did not provide the required statistics. Sixthly, studies that measured attitude change were excluded (e.g., McKimmie et al., 2003; Yousaf & Gobet, 2013). Indeed, we only included studies that measured the hypocrisy effect using behavioral intention and behavior measures since the IHP aims to prompt behavioral changes.

[1] Web of Science, Academic Search Premier, Business Source Complete, EconLit, Entrepreneurial Studies Source, ERIC, FRANCIS, MEDLINE, MLA International Bibliography, PsycEXTRA, PsycINFO, PsycARTICLES, Psychology and Behavioral Sciences Collection, Soc Index with Full text, and SPORTDiscus with Full text.

These criteria led us to exclude 67 studies. Our final corpus contained 35 studies. All research and studies that were excluded and reasons for their exclusion are presented in Table S2 (see supplementary materials). Table 1 displays the characteristics of these 35 studies included in the meta-analysis, including 34 studies comparing a hypocrisy condition to a control condition and 12 studies comparing a hypocrisy condition to a transgressions-only condition. Specifically, Table 1 shows information about the behavioral standards salience of the first step.

Prior to conducting the statistical analyses, the authors established the coding scheme for the variable (i.e., weak vs. strong standards salience), based on guidelines derived from existing literature on performing the first IHP step (Stone & Fernandez, 2028; Liégeois et al., 2017). Four specific criteria were considered in this process. Firstly, the presence of direct salience of social injunctive norms during the behavioral standard salience step was identified. Secondly, the inclusion of a task, such as advocacy, during this step was noted. Thirdly, the instructions' explicit mention of the public aspect of the step, such as associating the participant's name, was examined. Lastly, the emphasis placed on the consequences of the step, such as supporting researchers in implementing an awareness program, was assessed. Based on these criteria, the studies were categorized into either the "weak standards salience" or "strong standards salience" group using an inter-rater method. Each study was evaluated based on the four criteria mentioned above. In cases where there were disagreements in the assessments made by the authors, a discussion took place to reach a consensus.

Table 1

Characteristics of All Studies Included in the Meta-Analysis

Study	Measures	Behavioral Standards Salience Step				
		Injunctive norm salience	Task	Publicity	Consequence	Level
Aronson et al. (1991)	INT	No	Yes	Yes	Yes	Strong
Cooper & Feldman (2020, main study)	INT	No	Yes	Yes	Yes	Strong
Dickerson et al. (1992)	BHV	No	No	Yes	Yes	Weak
Drolet (2018, study 1)	INT	No	Yes	Yes	Yes	Strong
Eitel & Friend (1999)	INT	No	Yes	Yes	Yes	Strong
Fointiat & Grobras (2007, study 1)	INT	No	Yes	Yes	Yes	Strong
Fointiat & Grobras (2007, study 2)	INT	No	Yes	Yes	Yes	Strong
Fointiat (2008, collective condition)	INT	No	Yes	Yes	Yes	Strong
Fointiat et al. (2008)	INT	No	Yes	No	Yes	Weak
Fointiat et al. (2011)	INT	No	Yes	No	No	Weak
Hammons (2010)	BHV	No	Yes	Yes	Yes	Strong
Kantola et al. (1984)	BHV	No	Yes	No	No	Weak
Liégeois et al. (2005)	INT	No	Yes	Yes	No	Weak
Lopez et al. (2011)	INT	No	Yes	Yes	Yes	Strong
Mauduy, Bagneux & Sénémeaud (2022)	INT, BHV	No	Yes	Yes	Yes	Strong

Morrongiello & Mark (2008)	INT	No	Yes	Yes	Yes	Strong
Pelt & Fointiat (2018)	INT	No	Yes	No	Yes	Weak
Pelt (2017, study 0)	BHV	No	No	Yes	No	Weak
Pelt (2017, study 1)	INT, BHV	No	Yes	Yes	No	Weak
Pelt (2017, study 2)	INT	No	Yes	No	Yes	Weak
Pelt (2017, study 3)	INT	No	Yes	Yes	Yes	Strong
Priolo & Liégeois (2008, study 1)	INT	No	Yes	Yes	Yes	Strong
Priolo & Liégeois (2008, study 2)	INT	Yes	No	No	No	Strong
Priolo et al. (2016)	BHV	Yes	No	No	No	Strong
Rubens (2011, study 0)	INT	No	Yes	No	Yes	Weak
Rubens (2011, study B1)	INT	No	No	Yes	No	Weak
Rubens (2011, study B2)	INT	No	No	Yes	Yes	Weak
Rubens (2011, study B3)	BHV	No	No	Yes	No	Weak
Rubens (2011, study B4)	BHV	No	No	Yes	No	Weak
Rubens et al. (2015)	BHV	No	No	Yes	Yes	Weak
Sénémeaud et al. (2014)	INT	No	Yes	Yes	No	Weak
Stone et al. (1994)	INT, BHV	No	Yes	Yes	Yes	Strong
Stone et al. (1997)	INT, BHV	No	Yes	Yes	Yes	Strong
Thorman et al. (2020, study 1)	INT	No	No	Yes	No	Weak
Ward & Meade (2018, study 2)	BHV	No	Yes	No	Yes	Weak

Note. Studies are listed by alphabetical order of authors' names. BHV: behavior. INT: intention. When a study presented two measures (either intention or behavior), the measures were listed in the order in which they were presented to the participants. The meta-analysis was conducted on the first measure.
"Injunctive norm salience" indicates whether the injunctive social norm associated with the given behavior was directly made salient during the first step of the paradigm (e.g., reading a normative text).
"Task" indicates whether a task was performed by participants during step one (e.g., advocacy, essay).
"Publicity" indicates whether the public aspect of step one was made salient (e.g., participant's name associated, signing of a flyer, audio recording).
"Consequence" indicates whether the participant's completion of step one had consequences (e.g., helping run an awareness-raising program whether or not as part of a prevention association, raising awareness, promoting the given behavior among younger people)
"Level" indicates whether the study was categorized in the weak standards salience group or the strong standards salience group.
"Strong level" includes studies that either (i) made the injunctive norm salient or (ii) generated a strong commitment to the behavior by combining the three commitment factors (i.e., task, publicity, and consequence).
"Weak level" includes studies that did not make the injunctive norm salient and did not implement all three commitment factors.

Meta-Analytic Procedure

We carried out our meta-analysis in line with the recommendations made by Borenstein et al. (2009).

First, given that the studies in our corpus reported effect sizes in a variety of ways including *t*-tests (e.g., Stone et al., 1994), chi-square tests (e.g., Fointiat, 2008), and *F* tests (e.g., Morrongiello & Mark, 2008), we used Arthur et al.s' (2001) formulae to transform all reported effect sizes into correlation coefficient, *r*. Then, we transformed these effect sizes so that the correlation coefficient was positive when the behavioral change was greater in the hypocrisy condition than in the control or transgressions-only conditions. Finally, we used a Fisher's *z* transformation to estimate weighted effect sizes. Since our analyses had to consider studies that used more than one measure of the same construct (e.g., Fointiat & Grosbras, 2007; multiple behavioral measures), in which case effect sizes are statistically dependent, we followed Lipsey and Wilson's (2001) recommendation and averaged the relevant effect sizes. This procedure yielded a single mean effect size for each sample. For studies that included longitudinal measures (e.g., Hammons, 2010), we calculated effect sizes using only the data collected just after the experimental induction. Finally, when studies measured both behavioral intention and

behavior, we only included the first measure used in the meta-analysis. Indeed, the second measure used might be less reliable since we know that dissonance is essentially reduced via - and change is thus essentially observed on - the first proposed reduction mode (Fointiat et al., 2013).

Second, we used a random-effects model (for analyses without moderators) and a mixed-effects model (for analyses including moderators) to consider the wide range of studies (country, type of participants, type of behavior, and implementation procedure). We used forest plots to present the effect size of each study. We presented the effect size with confidence intervals and with the sample size of each study. The statistical heterogeneity was determined using the τ^2 and quantified using I^2, which represents the percentage of the total variation in a set of studies due to heterogeneity (Higgins et al., 2003). We used the *Metafor* package in R (Viechtbauer, 2010) to perform these analyses.

Third, we used the regression method described by Borenstein et al. (2009) to test whether the salience of the behavioral standards moderated the hypocrisy effect sizes (i.e., control vs. full hypocrisy procedure, and transgressions-only vs. full hypocrisy procedure). The publication bias across both conditions was tested in additional exploratory analyses.

Statistical Power

We conducted a sensitivity analysis using the R package *metapower* (Griffin, 2020) for a test of a moderation effect in a meta-analysis (Hedges & Pigott, 2004). Based on the results of Priolo et al.'s (2019) meta-analysis of the hypocrisy effect, we expected a sample size of 60 participants per study, an I^2 heterogeneity = .75, an effect size for the "weak" condition of d = .30, and an effect size for the "strong" hypocrisy condition of d = .85. Considering 34 studies, the analysis revealed that we had satisfactory statistical power (i.e., 86%, see Figure S1) to detect a random moderation effect.

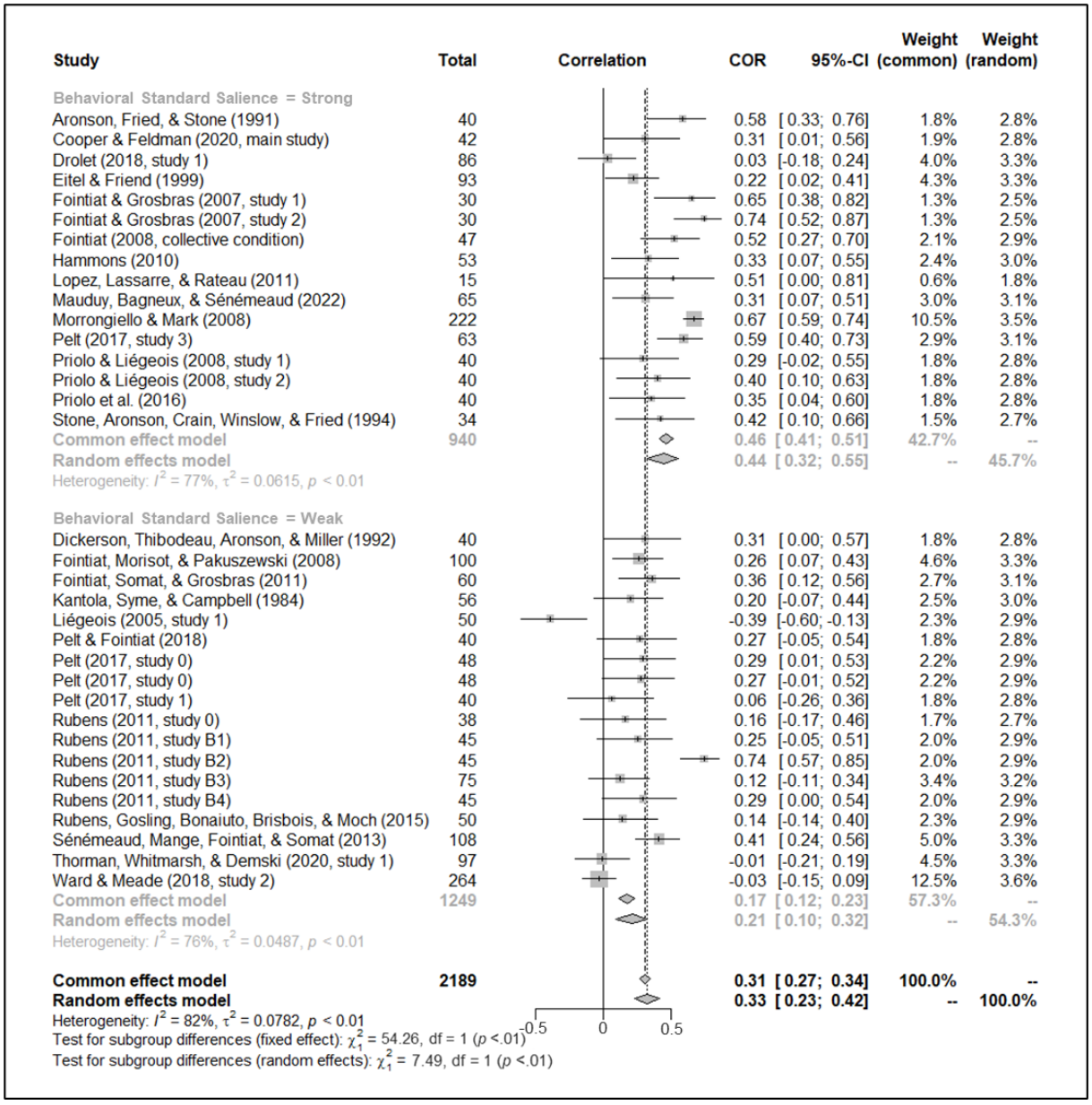
Results

Moderating Role of Behavioral Standards Salience on Hypocrisy Effect Size versus Control

The analysis was based on 34 studies that compared a hypocrisy condition to a control condition, of which 26 focused on behavioral intention and 8 focused on behavior. The results indicated a significant overall hypocrisy effect, r = .33 (95% CI [.23, .42], p <.001), meaning that the participants in the hypocrisy condition reported greater behavioral change than the participants in the control condition. Moreover, the results especially indicated a significant variability in effect sizes across studies (I^2 = 75%, τ^2 = .078, Q = 188.25, p <.001), which is consistent with the view that the possible moderation of effect sizes may be tested through the strength of behavioral standards salience. As expected, the results showed that the overall hypocrisy effect was moderated by the strength of behavioral standards salience (B = .26, SE = .09, 95% CI [.08, .44] p =.004, τ^2 = .047). More specifically, the hypocrisy effect size was small in the weak behavioral standards salience condition (r = .21, 95% CI [.10, .32]) and medium to large in the strong behavioral standards salience condition (r = .44, 95% CI [.32, .55]). Hence, these results are consistent with our first hypothesis (see Figure 1).

Figure 1

The Forest Plot of Included Effect Sizes of Hypocrisy Versus Control on Behavioral Change Separating Studies by Behavioral Standards Salience



Note. Total: sample sizes. COR: coefficient of correlation. CI: confidence interval.

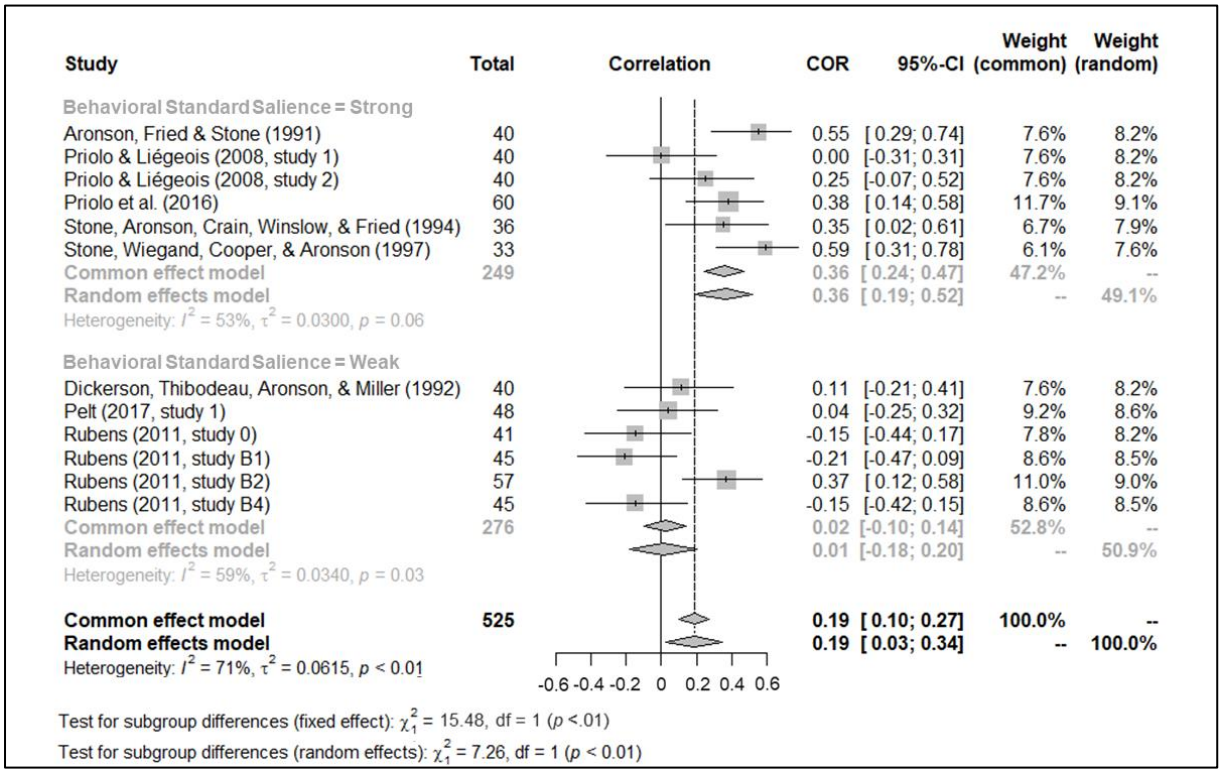
Moderating Role of Behavioral Standards Salience on Hypocrisy Effect Size versus Transgressions-only

The analysis was based on 12 studies that compared a hypocrisy condition to a transgressions-only condition. The results indicated a significant overall hypocrisy effect, r =

.19 (95% CI [.03, .34], p <.001), meaning that the participants in the hypocrisy condition reported greater behavioral change than the participants in the transgressions-only condition. Moreover, the results particularly indicated a significant variability in effect sizes across studies (I^2 = 71.4%, τ^2 = .06, Q = 38.46, p <.001), which is consistent with the view that the possible moderation of effect sizes may be tested through behavioral standards salience. The results of this moderation test are consistent with our second hypothesis (see Figure 2). They show that the overall hypocrisy effect is moderated by behavioral standards salience (B = .37, SE = .14, 95% CI [.10, .64], p =.007, τ^2 = .032). Specifically, the effect size, when comparing hypocrisy to transgressions-only, was non-significant in the "weak" condition (r = .01, 95% CI [-.18, .20]) but medium in the "strong" condition (r = .36, 95% CI [.19, .52]).

Figure 2

The Forest Plot of Included Effect Sizes of Hypocrisy Versus Transgressions-only on Behavioral Change Separating Studies by Behavioral Standards Salience



Note. Total: sample sizes. COR: coefficient of correlation. CI: confidence interval.

Additional Exploratory Analyses

We conducted additional exploratory analyses to verify three elements. First, we tested the publication bias for both conditions (i.e., "weak" and "strong" behavioral standards salience). Our meta-analysis could have underestimated the size of the moderation effect if the studies in the "weak" condition, with smaller effect sizes, had a publication bias. Secondly, we tested whether potential alternative-moderators (see Table S3), likely to be confounded with our target moderator, could explain our results. Thirdly, we investigated possible moderators of the hypocrisy effect size within two study groups, namely "weak" vs. "strong" behavioral standards salience.

Firstly, we tested the publishing bias in both conditions via Egger's regressions. The results indicated no publication bias for either the "weak" behavioral standards salience condition (p = .374) or the "strong" behavioral standards salience condition (p = .547). Secondly, we ran exploratory analyses to investigate whether the studies with the most extreme results were different from most other studies. Among other things, we performed a meta-regression (with the R package *dmetar*, Harrer et al., 2019) including several moderator variables in the model. The results (see Table S4) suggested that behavioral standards salience (strong vs. weak) guided our moderation effect, z = 2.25, p = .024, and there was no significant effect for topic (health vs. environment vs. others), z = 0.31, p = .75, or nature of consequences (self-focused vs. focused on others), z = -0.17, p = .86 (for more details see supplementary materials). Thirdly, we tested the potential moderator effect within the study groups. We firstly dealt with the studies collected under the "strong behavioral standards salience" condition, and then with the studies collected under the "weak behavioral standards salience" condition. Results indicated that none of these potential within-group moderators had a significant effect. For instance, in the “weak behavioral standards salience” condition, there was no significant difference in hypocrisy effect size (z = .09, p = .92) depending on whether studies implemented

a single commitment factor (r = .22, 95% CI [.05, .38]) or two commitment factors (r = .18, 95% CI [.06, .30]). The detailed analyses are presented in the supplementary materials.

Discussion

The purpose of this meta-analysis was to test the role of the first step of the IHP in obtaining hypocrisy effects. After noting that this step was not always carried out according to researchers' recommendations (Liégeois et al., 207; Stone & Fernandez, 2008), we classified IHP studies as to whether they performed the first step well. In other words, on the one hand there were studies that made the behavioral standards salient ("strong behavioral standards salience" group). On the other hand, there were studies that made them salient to a lesser extent ("weak behavioral standards salience" group). We compared hypocrisy (i.e., completion of both IHP steps) to the control condition (i.e., none of the two IHP steps) and to the transgressions-only condition, and tested whether the salience of behavioral standards moderated these two effects (hypocrisy vs. control and hypocrisy vs. transgressions-only). Firstly, the results showed that the hypocrisy procedure relative to the control condition had a stronger effect on behavioral change when the first IHP step made the behavioral standards more salient. Secondly, the hypocrisy procedure only had a greater value than the transgressions-only step when the first IHP step strongly emphasized behavioral standards. These results are consistent with a few experimental studies showing that strengthening the behavioral normative aspect enhances, (Fointiat, 2008) or even is necessary (Gamma et al., 2018; Stone et al., 1994), for the hypocrisy effect to occur. Thus, our results show that the first step of the IHP matters and they qualify the results of the meta-analysis of Priolo et al. (2019), which questioned the necessity of performing this first step to obtain the hypocrisy effect. Specifically, when performed well, the first step adds substantial value to the hypocrisy procedure (medium effect for the IHP compared to transgressions-only). However, when performed with lower behavioral standards salience, the first step has no added value (no difference between the IHP and transgressions-only step).

These results have two major implications that must be discussed. The first one concerns the theoretical debate on the psychological process underlying the hypocrisy effect and, to this end, invites further investigation of the role of the first step of behavioral standards salience. The second one concerns the applied perspectives of the IHP, highlighting the need to further investigate the optimal conditions for performing this first step, in order to make better use of it and thus prevent specific societal issues.

Feeding An Ongoing Debate About the Role of the Behavioral Standards Salience Step

Our findings are consistent with the current dominant explanation of the hypocrisy effect, the SSM-based explanation (Stone & Fernandez, 2008). This model gives an important role to this first step that aims at making salient the (personal or normative) standard on which people will base their evaluation of the inconsistency of their transgressive behaviors. However, an alternative theoretical approach to the hypocrisy effect, namely the deviation-from-norm approach (Liegeois et al., 2017), can bring another perspective to our results. This approach attaches a central role to normative standards in producing the hypocrisy effect, based on the observation that, within the induced-hypocrisy paradigm, the topic and behavior to which people are committed is always socially desirable and subject to an injunctive social norm (see Liégeois et al., 2017; Stone & Fernandez, 2008; Mauduy, Priolo et al., 2022). Yet, according to the commitment theory (Kiesler, 1971), committing someone to a behavior makes the behavior's characteristics salient. Consequently, strongly committing an individual (i.e., task performance, publicness, consequences) to a normative behavior, rather than making their personal standards salient, would reinforce the salience of normative standards. For that matter, the implementation of these three commitment factors, in comparison to situations where only one or two are present, seems to increase the salience of the normative aspect associated with the behavior (Gamma et al., 2018). Thus, according to this approach, the behavioral change in the hypocrisy paradigm would help reduce the perceived gap between an injunctive social norm

and its transgressions, with a stronger social norm salience resulting in a greater perceived gap between norm and transgressions, and a greater hypocrisy effect (Liégeois et al., 2017). This would lead us to consider not two paths to the hypocrisy effect, but a single path via normative standards in which the stronger the injunctive norm related to the behavior, the greater would be the hypocrisy effect. In any case, and before attempting to distinguish between these two theoretical explanations (i.e., one or two paths), it would be interesting to test experimentally whether one or other of the two recommendations for achieving the first step of the IHP leads to a greater hypocrisy effect.

Improving the Effectiveness of the Induced-Hypocrisy Paradigm While Extending its Reach

Based on the explanation of the hypocrisy effect in terms of self-consistency (Aronson, 1999), researchers have shown little interest in identifying the optimal conditions for performing the first IHP step. Our results indicated that for the IHP to be most effective, the behavioral standards salience step should make these standards strongly salient. This may be considered in two ways: (i) making the injunctive social norm directly salient or (ii) strongly committing people to that normative behavior. Furthermore, beyond making progress in identifying these optimal conditions, the potential for reinforcing the hypocrisy effect via this first step is particularly interesting for preventing certain issues related to induced hypocrisy. Indeed, when applying the IHP to the prevention of excessive alcohol consumption (Sénémeaud et al., 2014), excessive speeding (Fointiat et al., 2008), or unprotected sun exposure (Stone & Fernandez, 2011) research has shown that it is generally necessary to ask individuals to recall a large number of transgressions (e.g., four rather than one) to achieve a large hypocrisy effect. However, this would be difficult to implement in cases like discrimination prevention. The single study applied to this area of research (Son Hing et al., 2002) revealed this difficulty. Indeed, the participants were able to recall only few transgressions (fewer than two), which is

consistent with research conducted on discrimination, showing that people do not wish to be seen as behaving in a discriminatory way (e.g., Devine et al., 2002; Plant & Devine, 2001). Therefore, using the IHP to prevent these particular issues would require a focus on strengthening the behavioral standards salience step in order to enhance the effectiveness of induced hypocrisy by countering the weakness of the transgressions recall step.

Limitations and Conclusion

In conclusion, the present meta-analysis has shown that the first step of the IHP matters, since its operationalization (strong vs. weak behavioral standard salience) determines the magnitude of the hypocrisy effect size. However, two main study limitations may have weakened our conclusions.

First, our comparison between a transgression-only condition and a full hypocrisy condition was the most direct way to test the added value of the behavioral salience step. The results support this hypothesis. Indeed, we observed a difference between transgression-only and full hypocrisy conditions only when the salience of the behavioral standards was strong (vs. weak). However, it is important to note the sample of studies was small, and thus may not be representative of the wide range of potential studies. Consequently, we cannot discount the possibility that this effect could be attributed to the operationalization of the transgression-only and full hypocrisy conditions by the researchers. There might be an underlying factor that explains this effect. For instance, a specific thematic area may have been overrepresented (e.g., environmental preservation), which could have contributed to the emergence of this difference. Further studies with adequate statistical power are needed before generalizing from this limited sample of studies to a comprehensive understanding of human behavior. Otherwise, we achieved sufficient statistical power to test the moderation of the hypocrisy effect size compared to a control condition, which then appeared to be the best test of our hypothesis. The second limitation concerns the methodological heterogeneity which can make the results of meta-

analysis less reliable or generalizable. Specifically, the diverse operationalizations of the behavioral standards salience step, while accounted for in the statistical model through the evaluation of random effects, can introduce substantial variability across studies. Consequently, direct comparisons and the synthesis of data to establish overarching conclusions may be challenging. Despite these limitations, these interesting meta-analytic results clearly invite further investigation of this moderating role of behavioral standards salience in the induced-hypocrisy effect, especially by use of the experimental method.

Future studies could attempt to experimentally manipulate behavioral standards salience. To this end, we could consider manipulating people's normative beliefs about the target behavior within the first IHP step. Specifically, we could reinforce or weaken the injunctive social norm associated with the target behavior by exposing people to mere normative information about that behavior (e.g., "a minority/majority of people approve of [such behavior]," Miller & Prentice, 2016; Tankard & Paluck, 2016). If the standards play a role in the hypocrisy effect, then strengthening (vs. weakening) the injunctive norm associated with the behavior during the first step should increase (vs. decrease) the hypocrisy effect. While this future research could provide further insight into the processes underlying the hypocrisy effect, it could also improve our understanding of the optimal conditions under which induced hypocrisy is more effective.

Declaration of Interest Statement

The authors report no conflict of interest.

Data Availability Statement

The dataset for this research is available on the OSF at https://osf.io/wdegm/?view_only=bc9ed59d2c78446fa04a12cb77d525c9.

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