Soziale und personelle Einflussfaktoren auf unehrliches Verhalten

Dissertation
zur Erlangung des akademischen Grades eines
Doktors der Philosophie
der Fakultät HW
Empirische Humanwissenschaften
der Universität des Saarlandes

vorgelegt von
Kai Leisge
aus Frankfurt am Main

Saarbrücken 2025

Dekan:

Univ.-Prof. Dr. Axel Mecklinger

Berichterstatter

Univ.-Prof. Dr. Sabine Schäfer
Univ.-Prof. Dr. Henning Plessner

Tag der Disputation:

27. Mai 2026

Eidesstattliche Erklärung

Ich versichere, dass ich die eingereichte kumulative Dissertation selbstständig, ohne unzulässige fremde Hilfe und ohne Benutzung anderer als der angegebenen Quellen und Hilfsmittel angefertigt und die den benutzten Werken wörtlich oder inhaltlich entnommenen Stellen als solche kenntlich gemacht habe. Zudem versichere ich, dass die Dissertation in dieser oder ähnlicher Form noch nicht anderweitig als Promotionsleistung vorgelegt und bewertet wurde.

Saarbrücken, den 01. Dezember 2025

(Kai Leisge)

Danksagung

Mein erster und größter Dank gilt Prof. Dr. Sabine Schäfer. Deine herzliche Art und Offenheit haben mich stets motiviert; auch in Phasen, in denen es mal nicht so gut lief. Unsere fachlichen und alltäglichen Gespräche habe ich immer sehr geschätzt, und weil ich sie nicht missen möchte, hoffe ich, auch in Zukunft daran teilhaben zu können. Nach wie vor bewundere ich, wie schnell und intensiv Du dich in die unterschiedlichsten Forschungsprobleme einarbeiten kannst. Damit hast Du mir und meiner wissenschaftlichen Entwicklung enorm geholfen. Es hat mich unheimlich gefreut, in den vergangenen Jahren von Dir und Deiner Erfahrung lernen zu dürfen. Eine bessere Betreuung hätte ich mir nicht vorstellen können. Vielen Dank für alles, Sabine.

Mein nächster Dank gilt PD Dr. Werner Pitsch, der mich bereits als studentische Hilfskraft angeleitet und gemeinsam mit Eike Emrich für die (Sport-)Wissenschaft begeistert hat. Ihre interdisziplinäre Sichtweise auf Forschung und andere Probleme ist immer eine Bereicherung. Nicht nur für meine wissenschaftliche Arbeit, sondern auch für mich als Person. Ihr Interesse an meiner Meinung und Ihr Vertrauen in meine Fähigkeiten haben mich stets wachsen lassen. Ich kann noch unendlich viel von Ihnen lernen und hoffe, genau dies in nächster Zeit auch weiterhin tun zu dürfen.

Ein weiteres großes Dankeschön gilt meinen engen Kollegen Patrick Braeunig, Dr. Christian Kaczmarek, Dr. Monika Frenger und Dr. Markus Klein. Ihr habt mich in jeder Lage unterstützt und wart durch eure offene und freundliche Art stets hilfsbereit. Außerdem habt ihr mit einer guten Portion Humor dafür gesorgt, dass man die kleinen Probleme im Arbeitsalltag nicht zu ernst nimmt. Vielen Dank für die tolle Zeit und die vielen gemeinsamen Momente, die nicht nur meine Arbeit, sondern auch mich persönlich bereichert haben.

Besonders hervorheben und bedanken möchte ich mich bei der besten Bürokollegin und guten Freundin Anna Heggenberger. Danke, Anna, für deine positive und verständnisvolle Art. Ohne dich hätte ich diese Dissertation nicht in der Art und Weise beenden können. Danke für die vielen Anregungen, die offenen Ohren, das gemeinsame Lachen und die wundervolle Zeit. Du hast nicht nur meinen Arbeitsalltag bereichert, sondern auch dafür gesorgt, dass schwierige Phasen leichter zu bewältigen waren.

Vielen Dank an die studentischen Hilfskräfte, die Probanden und die Studierenden, die an den Projekten dieser Promotion mitgewirkt haben.

Weiter möchte ich mich bei meiner Familie bedanken. Liebsten Dank an meinen Vater Jürgen und meine Mutter Elisabeth. Ohne Euch, die mir den Rücken freihalten und stets hinter mir stehen, wäre

mein bisheriger Weg so nicht möglich gewesen. Danke auch an meine Oma Maria, die zwar nicht immer wusste, über welche wissenschaftlichen Probleme ich mich beschwere, aber trotzdem immer ein offenes Ohr und eine noch leckere Mahlzeit parat hatte. Danke auch an meinen Zwillingsbruder Paul und meine Schwester Lena, die mich auf meinem Weg stets begleitet und bestärkt haben und dafür sorgten, dass ich die Arbeit auch mal vergessen kann. Ohne euch, meine Familie, hätte ich die Aufgaben des Lebens nicht so bewältigen können.

Danke auch an die gemeinsamen Weggefährten Simon, Johanna, Jonathan, Ronja, Louisa, Emma und Fabian. Eure Unterstützung und eure Freundschaft haben meinen Weg bereichert.

Als nächstes möchte ich mich bei meinen engsten Freunden bedanken. Danke an meine (ehemaligen) Mitbewohner Mathias, Maxi, Johanna und Anna. Eure Meinung und eure Gesellschaft bedeuten mir unglaublich viel. Ich bin dankbar für jede Diskussion und jedes Problem, das wir gemeinsam angehen konnten. Ein Hoch auf die gemeinsame Zeit!

Zu guter Letzt noch einen besonders großen Dank an meine liebsten Freunde Chris und Selina. Ihr wart stets meine größten Fans und engsten Begleiter. Ihr habt mich unterstützt und bestärkt wie niemand sonst. Unsere Freundschaft bedeutet mir alles. Vielen Dank ihr Zwei.

EIN HERZLICHES DANKESCHÖN!

Zusammenfassung

Die vorliegende Dissertation widmet sich der Frage, durch welche sozialen und psychologischen Determinanten unehrliches Verhalten beeinflusst wird und welche Rolle soziale und personale Faktoren dabei spielen. Aufbauend auf soziologischen, sozialpsychologischen und ökonomischen Ansätzen untersucht sie, wie Individuen in unterschiedlichen Kontexten Entscheidungen zwischen ehrlichem und unehrlichem Handeln treffen. Unehrlichkeit wird dabei als intendierte Normverletzung verstanden, die auf der bewussten Falschdarstellung der eigenen Leistung basiert. Ziel der Arbeit ist es, bestehende Forschungslücken zu schließen, indem individuelle Verhaltensdaten, wiederholte Messungen und differenzierte experimentelle Designs kombiniert werden, um sowohl personale als auch kontextuelle Einflüsse präzise erfassen zu können. Methodisch innovativ ist die Trennung zwischen der Entscheidungsebene, ob unehrliches Verhalten gezeigt wird, und der Intensitätsebene, also in welchem Ausmaß es auftritt.

Die Dissertation vereint fünf empirische Beiträge, die unterschiedliche Facetten unehrlichen Handelns beleuchten. Die Ergebnisse zeigen, dass unehrliches Verhalten über verschiedene Aufgaben hinweg weitgehend stabil bleibt, jedoch die drei Typen der Self-Licensing Theorie auftreten. Personen sind entweder durchgehend ehrlich, durchgehend unehrlich oder passen ihre moralischen Entscheidungen situativ variabel an. Anonymität und Online-Umgebungen erhöhen Unehrlichkeit signifikant, während physische Präsenz und Beobachtung sie deutlich reduzieren. Männer handeln in anonymen Online-Kontexten häufiger unehrlich als Frauen, während diese Unterschiede in Präsenzbedingungen verschwinden. Wiederholte Gelegenheiten steigern Unehrlichkeit mit der Zeit. Verlust- oder Gewinnformulierungen zeigten keinen signifikanten Einfluss, was die universelle Gültigkeit der Prospect Theory bezogen auf unehrliches Verhalten infrage stellt.

Die Dissertation leistet damit einen interdisziplinären Beitrag zur Erforschung moralischen Handelns, indem sie zeigt, dass unehrliches Verhalten weder ausschließlich durch ökonomische Kosten-Nutzen-Abwägungen noch durch stabile Persönlichkeitsmerkmale erklärbar ist. Vielmehr entsteht es im Zusammenspiel von moralischer Selbstregulation, normativer Bindungskraft und sozialer Einbettung. Trotz begrenzter externer Validität der experimentellen Designs liefert sie wertvolle Erkenntnisse über die Bedingungen, unter denen Menschen Normen verletzen oder ihnen treu bleiben, und eröffnet damit neue Perspektiven für die theoretische und praktische Auseinandersetzung mit der sozialen und psychologischen Grundlage menschlicher Ehrlichkeit.

Inhaltsverzeichnis

1 Einleitung

Die Behauptung, im Leben noch nie gelogen zu haben, ist mit hoher Wahrscheinlichkeit selbst eine Lüge. Denn Lügen und Unehrlichkeit sind kein seltenes Phänomen, das sich auf einige wenige Personen oder Situationen beschränkt, sondern sie sind ein fester und oft verdeckter Bestandteil alltäglicher sozialer Interaktionen. Empirische Studien zeigen, dass Menschen im Durchschnitt ein- bis zweimal pro Tag lügen (DePaulo et al., 1996; Hart et al., 2024; Verigin et al., 2019), wobei die Verteilung stark schief ist. Die Mehrheit der Menschen lügt selten, während eine kleine Gruppe sogenannter „Prolific Liars" für den Großteil aller Lügen verantwortlich ist und so das Gesamtbild dominiert (Serota et al., 2010; Serota et al., 2022). Doch Lügen sind nicht gleich Lügen, sondern sie lassen sich in verschiedene Typen unterteilen. Darunter *White Lies* (harmlose Höflichkeitslügen wie: „Natürlich hat es mir geschmeckt"), *Black Lies* (Lügen, die dem eigenen Vorteil dienen oder anderen schaden) sowie *Prosocial Lies*, die mit der Intention geäußert werden, das Wohl einer anderen Person zu fördern (Bok, 2011; Levine & Schweitzer, 2014; Steinmetz & Posten, 2018). Was im Alltag oft als harmlose *White Lie* daherkommt, dient zumeist Höflichkeit oder Beziehungsmanagement und gilt bei vielen als sozial akzeptabel (Beller & Stoll, 1996; Biziou-van-Pol et al., 2015). Bei Betrachtung dieser Alltagsforschung könnte die Erkenntnis erlangt werden: „*Wer lebt, der lügt auch*".

Die Tatsache, dass Lügen alltäglich sind, bedeutet jedoch nicht, dass sie normativ akzeptiert sind. Vielmehr bewegen sich Menschen in einem Spannungsfeld zwischen gesellschaftlichen Normen und individuellen Vorteilen. Verhaltensentscheidungen im Alltag lassen sich daher nur selten auf rein materialistische Kosten-Nutzen-Analysen reduzieren. Vielmehr stellt soziales Handeln eine komplexe Abwägung individueller Motivationen, kontextueller Aspekte der vorliegenden Situation und antizipierter Verhaltenserwartungen anderer dar (Weber, 1976). Vereinfacht betrachtet kann das Ergebnis dieser Abwägung nicht selten eine dualistische Entscheidungsstruktur annehmen, die zwischen normkonformem und normabweichendem Verhalten unterscheidet. Dies kann in der alltagsnahen Metapher vom „Engel und Teufel auf der Schulter" illustriert werden. Der innere Abwägungsprozess berücksichtigt kurzfristige und langfristige Nutzen von Handlungsalternativen, vergleicht diese mit wahrgenommenen Normen und Regeln und bezieht Aspekte wie Selbstschutz und Eindrucksmanagement ein. Das Resultat ist eine Entscheidung zugunsten des moralisch Erwarteten, also im Sinne gesellschaftlicher Normen, Regeln und Gesetze, oder zugunsten einer normabweichenden Alternative, die in Form von Unehrlichkeit den eigenen Vorteil priorisiert und potenzielle Schädigungen anderer in Kauf nimmt. Die Frage, die sich auf individualer Ebene stellt, ist, ob ich tun kann was ich möchte, ohne mich gleichzeitig wie eine schlechte Person zu fühlen oder als eine solche wahrgenommen zu werden (Effron, 2016).

Die bisherigen Ausführungen verdeutlichen, dass menschliches soziales Verhalten, und damit auch Unehrlichkeit, komplexe psychologische und soziale Prozesse umfasst. Aus dieser individualpsychologischen Perspektive ergibt sich notwendigerweise ein Blick auf die gesellschaftliche Dimension, da Handlungen selten isoliert auf das Individuum beschränkt bleiben. Unehrlichkeit ist somit kein rein individuelles Phänomen, sondern mit weitreichenden Konsequenzen für Betroffene, Institutionen und die Gesellschaft verbunden (Loewen et al., 2013). Während kleinere Formen normabweichenden Verhaltens auf der Mikroebene soziale Unzufriedenheit oder den Verlust interpersonellen Vertrauens bewirken können, führen gravierende Verstöße gegen Normen und Gesetze auf der Makroebene zu erheblichen Beeinträchtigungen des öffentlichen Vertrauens, der Gesundheit und der ökonomischen Stabilität (Argo & Shiv, 2012; van Driel, 2019). Das Spektrum reicht dabei von Täuschung in alltäglichen Interaktionen (Burgoon et al., 2003) über Untreue in Beziehungen (Whisman & Snyder, 2007) bis hin zu Steuerhinterziehung (Korndörfer et al., 2014) oder Korruption (Jain, 2001).

Auch im Sport wird die Tragweite von normabweichendem und regelverletzendem Verhalten deutlich. Dopingpraktiken zielen unter anderem darauf ab, die Leistungsfähigkeit über das natürliche Niveau hinaus zu steigern. Dies gefährdet nicht nur die Gesundheit der Athleten (S. R. Bird et al., 2016), sondern sie untergraben ebenfalls den Fair-Play Gedanken, das Vertrauen in die Sportorganisationen und die Wettkampfintegrität (E. J. Bird & Wagner, 1997). Bei Aufdeckung drohen sportliche Sanktionen, rechtliche und finanzielle Konsequenzen sowie Reputationsverluste. Offizielle Daten der Welt Anti Doping Agentur (WADA) weisen mit 0,67 % positiver Tests nur eine geringe Prävalenz aus (WADA, 2023). Allerdings erfassen diese Zahlen nur bestätigte Fälle. Methodische Einschränkungen und Vertuschungsstrategien legen aber eine erhebliche Dunkelziffer nahe (Davoren et al., 2024; Schamasch & Rabin, 2012). Prävalenzschätzungen mittels indirekter Befragungstechniken liefern mit rund 30% womöglich akkuratere Ergebnisse und verdeutlichen so die Allgegenwärtigkeit des Problems (Elbe & Pitsch, 2018; Pitsch & Emrich, 2012).

Zugleich zeigt ein Blick über den Sport hinaus, dass Unehrlichkeit alle gesellschaftlichen Sphären, einschließlich der Wissenschaft, erreichen kann. So wurde jüngst eine renommierte Harvard-Professorin, die sich ironischer Weise in ihrer Forschung hauptsächlich mit unethischem Verhalten befasste, aufgrund nachgewiesener Datenmanipulation in mehreren Fällen von ihrem Amt enthoben (O'Grady, 2024). Diese Beispiele legen nahe, dass Unehrlichkeit ein omnipräsentes Problem darstellt, das in allen sozialen Schichten und Kontexten auftritt (van Prooijen & van Lange, 2016).

Diese Ausführungen machen deutlich, dass der Begriff unehrliches Verhalten ein breites Spektrum an Handlungen umfasst, die in der Regel soziale oder institutionelle Normen verletzen, um einen persönlichen Vorteil zu erlangen. In der empirischen Literatur werden verwandte Begrifflichkeiten wie

unethisches Verhalten (Wang & Chen, 2021), abweichendes Verhalten (Pascaru-Goncear, 2023), Lügen (Childs, 2012), Täuschung (Gneezy, 2005) oder Cheating (Ezquerra et al., 2018) häufig synonym verwendet. Allen Konzepten liegt jedoch die gemeinsame Grundlage einer intendierten Norm- oder Regelverletzung zugrunde (Kennette & Jelenic, 2023), wobei die terminologische Abgrenzung oft unscharf bleibt (Grolleau et al., 2016). Vor diesem Hintergrund wird in der vorliegenden Arbeit der übergeordnete Terminus ***unehrliches Verhalten*** verwendet, um Handlungen zu beschreiben, die darauf abzielen, andere zu täuschen oder sich einen unrechtmäßigen Vorteil zu verschaffen, der andernfalls nicht erreicht worden wäre. Dies bezieht sich im Falle dieser Arbeit auf die bewusste Falschdarstellung der eigenen Leistung. Diese begriffliche Klarheit ist notwendig, um die theoretische Fundierung und die empirische Operationalisierung konsistent zu gestalten.

Trotz der umfangreichen Forschung zu unehrlichem Verhalten bestehen weiterhin zentrale Forschungslücken. Ein Großteil der bisherigen Studien stützt sich auf experimentelle Designs, die Rückschlüsse primär auf aggregierter Ebene zulassen, während individuelle Unterschiede im Verhalten häufig nicht untersucht wurden. Systematische Analysen, die mehrere relevante Dimensionen, wie intrapersonelle Stabilität und situative Faktoren auf Basis individueller Verhaltensdaten isoliert oder in Kombination analysieren, sind bislang selten.

Ziel dieser Arbeit ist es, zentrale Determinanten unehrlichen Verhaltens zu identifizieren. Im nächsten Kapitel erfolgt eine allgemeine Einführung in das Konzept des sozialen Handelns, sowie eine theoretische Hinführung zu den ersten Beiträgen, die dieser Arbeit zugrunde liegen. Zunächst werden jedoch, nach Formulierung der übergeordneten Forschungsfrage, weitere Spezifizierungen thematisiert. Die leitende Forschungsfrage für die Dissertation lautet daher:

„Durch welche sozialen und personellen Determinanten wird unehrliches Verhalten beeinflusst bzw. hervorgerufen?“

Um diese Frage differenziert zu beantworten, werden zwei Teilforschungsfragen formuliert:
(1) Welche sozialen (kontextuellen) Bedingungen beeinflussen unehrliches Verhalten?
(2) Welche personellen Faktoren prägen unehrliches Verhalten?

Die fünf empirischen Beiträge sind diesen Teilfragen zugeordnet und prüfen theoretische Annahmen auf der Grundlage bestehender Modelle und vergangener Forschungsergebnisse. Die Arbeit schließt eine Lücke an der Schnittstelle zwischen Theorie und Empirie, indem sie theoretische Annahmen zur Normbindung und moralischen Selbstregulation durch experimentelle Evidenz ergänzt. Innerhalb der Dissertation wird versucht, bestehende Forschungslücken in der Analyse unehrlichen Verhaltens zu

adressieren und durch neue methodische Ansätze, die über bisherige Standardverfahren hinausgehen, sinnvoll zu ergänzen. Ein Großteil der bisherigen Empirie beruht auf Ergebnissen, bei denen die beobachtete Verteilung eines Zufallsexperiments (bspw. Münz- oder Würfelwurf) mit der angenommenen Verteilung verglichen wurde (Bucciol & Piovesan, 2011; Fischbacher & Föllmi-Heusi, 2013). Während in einem Großteil der bisherigen Studien lediglich aggregierte Daten gewonnen wurden, die in der Regel nicht direkt mit beobachtbaren Verhalten assoziiert werden können (Gerlach et al., 2019), verfolgt die Dissertation einen Ansatz, der individuelle Verhaltensdaten in den Mittelpunkt stellt. Dadurch wird nicht nur die Identifikation unehrlichen Handelns auf individueller Ebene ermöglicht, sondern auch die Quantifizierung seines Ausmaßes. Dieses Vorgehen erlaubt damit eine systematische Trennung zwischen der Entscheidungsebene (wird unehrliches Verhalten gezeigt oder nicht) und der Intensitätsebene (wie hoch ist das Ausmaß an unehrlichem Verhalten). Eine weitere methodische Besonderheit besteht darin, dass die eingesetzten Verfahren nicht auf einer einmaligen Messung beruhen, sondern mehrere Wiederholungen pro Person umfassen. Dies erhöht die Reliabilität der Messung und stärkt die Aussagekraft der Befunde. Die Kombination dieser Merkmale stellt einen substantiellen Mehrwert für die empirische Forschung dar.

Geleitet von diesen Forschungslücken verfolgt die vorliegende Arbeit einen Ansatz, in dem personale Dispositionen, situative Normstrukturen und Anreize betrachtet werden. Damit wird unehrliches Verhalten nicht lediglich als eindimensionale Kosten-Nutzen-Bilanz verstanden, sondern als Resultat eines fortlaufenden Abwägungsprozesses zwischen Selbstbild, sozialen Erwartungen und kontextabhängigen Strukturen.

Die vorliegende Dissertation vereint fünf eigenständige Beiträge, die unterschiedliche Facetten unehrlichen Verhaltens beleuchten. Sie leistet einen Beitrag zur Erklärung und Ergänzung von unehrlichem Verhalten in unterschiedlichen sozialen Kontexten und basiert auf zwei methodischen Ansätzen, die in der bisherigen Forschung zu diesem Thema nur begrenzt Beachtung fanden. Gerade an dieser Schnittstelle liegt die zentrale Forschungslücke: Wie wirken kontextuelle und personelle Determinanten zusammen, wenn Menschen Entscheidungen zwischen ehrlichem und unehrlichem Verhalten wiederholt treffen?

Ein erster Untersuchungsgegenstand ist dabei die intrapersonelle Stabilität unehrlichen Verhaltens (Beitrag 1). Die zuvor erwähnte ungleich verteilte Lügenhäufigkeit im Alltag weist bereits auf Unterschiede zwischen Individuen hin (Serota et al., 2010; Serota et al., 2022). Solche Differenzen lassen sich auf stabile Merkmale und Persönlichkeitseigenschaften zurückführen (Thielmann et al., 2025), aber auch genetische Befunde stützen diese Annahme (Loewen et al., 2013; Shen et al., 2016; Smith & Hatemi, 2020). Ein methodisches Novum liegt in der Kombination einer feinmotorischen Tracing-Aufgabe mit einer Selbsteinschätzungsaufgabe (Schaefer et al., 2023). Das Design ermöglicht damit

die Erfassung unehrlichen Verhaltens innerhalb derselben Aufgabe über mehrere Wochen hinweg. Diese longitudinale Aufgabe erlaubt es, intraindividuelle Stabilität und zeitliche Dynamiken und Aspekte zu analysieren, die in bisherigen Studien kaum berücksichtigt wurden (Beitrag 2). Ein weiterer Faktor, der in wissenschaftlichen Beiträgen zu unehrlichem Verhalten diskutiert wird, ist das Geschlecht. Bisherige Studien kommen jedoch zu keinem konsistenten Ergebnis. Während einige Studien höhere Unehrlichkeit bei Männern berichten (Grosch & Rau, 2017; Lohse & Qari, 2021), zeigen andere kontextabhängige Effekte (Chowdhury et al., 2021), oder finden keine Geschlechtsunterschiede (Aoki et al., 2010; Ezquerra et al., 2018). Einige wenige Studien berichten hingegen von höherem unehrlichem Verhalten von Frauen (Clot et al., 2014; Tyler & Feldman, 2004). Unter anderem untersucht diese Dissertation daher, ob Geschlecht als personelle Determinante von unehrlichem Verhalten identifiziert werden kann.

Ebenso relevant sind kontextuelle und situative Faktoren. Anonymität, soziale Präsenz (Beitrag 2 bis 5) und ökonomische Anreize verändern die wahrgenommenen Kosten-Nutzen-Kalkulationen sowie die Normen, und können ebenfalls einen Einfluss auf unehrliches Verhalten nehmen (Klein et al., 2020; Kroher & Wolbring, 2015). Auch unterschiedliche Formulierungen wie Gewinn- oder Verlustvermeidung können unehrliches Verhalten beeinflussen (Ezquerra et al., 2018; Grolleau et al., 2016) und werden deshalb in dieser Arbeit thematisiert (Beitrag 4).

Zusammengenommen verfolgt die Arbeit damit einen interdisziplinären Ansatz, der soziologische, ökonomische sowie sozialpsychologische Theorien betrachtet. Indem personale und situative Einflüsse sowohl separat, als auch in ihren Wechselwirkungen analysiert und über wiederholte Messungen auf individueller Ebene quantifiziert werden, trägt die Dissertation zu einer präzisen Erklärung unehrlichen Verhaltens bei. Einen chronologischen Überblick über die fünf Beiträge bietet Tabelle 1. Alle Beiträge sind im Anhang der Synopse vollständig enthalten.

Im nächsten Kapitel werden die theoretischen Grundlagen systematisch aufbereitet. Beginnend mit Grundannahmen sozialen Handelns und Rationalitätskonzepten werden im Anschluss komplementäre Perspektiven dargestellt und verbunden.

Tabelle 1: Auflistung der einzelnen Beiträge der kumulativen Dissertation, sowie die Arbeitsanteile der involvierten Autoren

Beitrag	Titel	Arbeitsanteile					
		Design/ Konzept	**Aufbereitung Literatur**	**Erhebung der Daten**	**Analyse der Daten**	**Einreichung**	**Hinweise Überarbeitung**
Nr. 1	***Leisge, K.***, Kaczmarek, C., & Schaefer, S. (2024). How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior. *Frontiers in Psychology*, 15. https://doi.org/10.3389/fpsyg.2024.1297058	**KL**, SS	**KL**	**KL**	**KL**	**KL**	CK, SS
Nr. 2	***Leisge, K.***, Heggenberger, A., Kaczmarek, C., Pitsch, W., & Schaefer, S. (2025). Tracing the lines of deceit. Male cheating behavior increases in online versus face-to-face environments over time. *Acta Psychologica*, 259, 105373. https://doi.org/10.1016/j.actpsy.2025.105373	**KL**, SS	**KL**	**KL**, AH, CK	**KL**, WP	**KL**	AH, CK, WP, SS
Nr. 3	***Leisge, K.***, Pitsch, W., & Schaefer, S. (im Review Prozess). Spotting the difference from lab to screen: How social distance and anonymity affect dishonesty. [Eingereicht bei Acta Psychologica]	**KL**, SS	**KL**	**KL**	**KL**, WP	**KL**	WP, SS
Nr. 4	***Leisge, K.,*** Welsch, L., Pitsch, W., & Schaefer, S. (in Druck). Framing effects and social context as determinants of dishonest behavior. *Discover Psychology*. https://doi.org/10.1007/s44202-025-00494-6	**KL**, WP, SS	**KL**	**KL**, LW	**KL**, WP	**KL**	LW, WP, SS
Nr. 5	***Leisge, K.,*** Heggenberger, A., & Schaefer, S. (im Review Prozess). (Dis)Honest when (Un)Seen: Observer presence decreases dishonest behavior. [Eingereicht bei Journal of Economic Psychology]	**KL**, SS	**KL**	**KL**	**KL**, AH	**KL**	AH, SS

Anmerkung: Nicht gelisteter Arbeitsanteil ist die von Sabine Schäfer geleistete Supervision bei allen Beiträgen

2 Theoretische Hintergründe

2.1 Soziales Handeln und Verhalten

Die bisherigen Einführungen haben bereits angedeutet, dass sich unehrliches Verhalten dort entfaltet, wo menschliches Handeln sozial eingebettet ist. Es wird an anderen orientiert, und Entscheidungen werden folglich nicht ausschließlich durch materielle Anreize, sondern ebenso durch psychologische und sozial-normative Faktoren geprägt. Zur weiteren Ausführung dieser ersten Handlungsperspektive wird auf Max Weber zurückgegriffen. Er beschreibt soziales Handeln als dreifach determiniert durch die Motivation, die Situation und die Verhaltenserwartungen potenzieller oder tatsächlicher Interaktionspartner (Weber, 1976). Mit Motivation sind die zugrundeliegenden Beweggründe für eine Handlung gemeint, die Weber in vier Typen unterteilt, die im Alltag jedoch nur selten isoliert auftreten. Darunter, (a) wertrationales Handeln, das unabhängig vom Erfolg aus innerer Überzeugung erfolgt, (b) affektuelles Handeln, das durch Emotionen bestimmt ist, (c) traditionales Handeln, das auf Gewohnheit oder Tradition beruht, und (d) zweckrationales Handeln, bei dem Mittel rational gewählt werden, um ein Ziel zu erreichen, wobei mögliche positive und negative Konsequenzen abgewogen werden (Abels, 2019; Weber, 1976).

Analog zu Webers Typologie, die Handlungen als mehrdimensional versteht, fokussiert sich die ökonomische Theorie in ihren Grundlagen auf den Typus des zweckrationalen Handelns. Dieser Typus bildet die Grundlage des in der ökonomischen Theorie dominanten Modells des ***homo oeconomicus***. Das Modell ist eng mit der Rational-Choice-Theorie verknüpft, die Handeln als Ergebnis rationaler Kosten-Nutzen-Abwägungen konzipiert (Becker, 1976; Coleman, 1990). Akteure werden dabei als egoistische Nutzenmaximierer gesehen, die unter stabilen persönlichen Präferenzen und Inhaber vollständiger Information Entscheidungen treffen (Gerlach et al., 2019; Henrich et al., 2001; Rosenbaum et al., 2014). Es handelt sich dabei um eine normative Modellannahme, die in der klassischen und neoklassischen Ökonomie zentrale Bedeutung erlangt hat, jedoch in der empirischen Forschung zunehmend kritisch hinterfragt wird, da sie zentrale Dimensionen realen Entscheidungsverhaltens ausblendet. Gerade diese Beschränkung führt dazu, dass die „enge Version“ der Theorie an ihre Grenzen stößt, wenn es um die Erklärung sozial eingebetteter Handlungen geht, die nicht allein durch materielle Anreize bestimmt sind. Vor diesem Hintergrund wurde die RCT um eine „weite Version“ ergänzt, die neben instrumentellen Motiven auch normative und soziale Faktoren berücksichtigt (Opp, 1999). Esser (1999) integrierte hierzu das Konzept des subjektiv erwarteten Nutzens, das individuelle Wahrnehmungen von Kosten, Nutzen und Erfolgswahrscheinlichkeiten einbezieht. Opp (1999) ging einen Schritt weiter, indem er Überzeugungen, soziale Normen, Altruismus und Sanktionen in die Modellierung aufnahm. Diese Erweiterungen erlauben es, nicht nur egoistische, sondern auch prosoziale oder

normorientierte Präferenzen zu berücksichtigen und unvollständige Informationen in die Entscheidungslogik einzubeziehen. Für die Erklärung unehrlichen Verhaltens bedeutet dies, dass Regelverstöße adäquater erklärt werden können. Während in der engen Version die Entscheidung für Unehrlichkeit als rationaler Versuch der Nutzenmaximierung gesehen wird, ermöglicht die weite Version die Berücksichtigung moralischer Kosten, sozialer Sanktionen und des Strebens nach Aufrechterhalten des positiven Selbstbildes. Die vorliegende Arbeit greift dieses Modell als theoretischen Referenzpunkt auf, erweitert es jedoch zusätzlich um sozialpsychologische und normativ eingebettete Handlungsperspektiven.

Empirische Befunde zeigen, wie menschliches Verhalten systematisch von den Annahmen des ***homo oeconomicus*** und der engen Version der Rational-Choice Theorie abweicht. So belegen zahlreiche Studien, dass Individuen, wenn sich die Gelegenheit bietet, durchaus unehrlich handeln, dies jedoch nicht im maximal möglichen Ausmaß tun, selbst dann nicht, wenn erhebliche monetäre Gewinne in Aussicht stehen (Ezquerra et al., 2018; Grym & Liljander, 2016; Mazar et al., 2008). Die Meta-Analyse von Abeler et al. (2019) verdeutlicht, dass Menschen nicht stärker lügen, wenn die finanziellen Anreize steigen. Das Ausmaß unehrlichen Verhaltens bleibt nahezu unverändert, obwohl die potenzielle Auszahlung in den untersuchten Experimenten um den Faktor 500 variiert wurde (Abeler et al., 2019). Dies widerspricht der klassischen Annahme, dass höhere monetäre Anreize automatisch zu mehr Täuschung führen. Diese Befunde widersprechen der Annahme einer strikt nutzenmaximierenden Rationalität und verdeutlichen, dass ökonomische Anreize allein das Verhalten nicht hinreichend erklären können. Vielmehr legen sie nahe, dass zusätzliche Determinanten wie situative Rahmenbedingungen und die antizipierten Verhaltenserwartungen relevanter Interaktionspartner zur Erklärung (un)ehrlichen Handelns beitragen (Weber, 1976).

Handlungen sind stets eingebettet in soziale Situationen, die durch Normen, Werte und institutionelle Rahmenbedingungen strukturiert sein können. Diese Situationskontexte beeinflussen nicht nur die Handlungsmöglichkeiten, sondern auch die Erwartungen an angemessenes Verhalten. Dabei lassen sich explizite Regeln, wie Gesetze oder formale Vorschriften, von impliziten Regeln unterscheiden, die in sozialen Normen, Rollenbildern und kulturellen Erwartungen verankert sind (Tranow, 2024).

Neben individuellen Motiven und situativen Bedingungen wird normkonformes wie auch normabweichendes Verhalten durch die antizipierten Erwartungen potenzieller und tatsächlicher Interaktionspartner bestimmt (Weber, 1976). Diese Erwartungen können sowohl in Form moralischer Verpflichtungen normativ oder auch strategisch geprägt sein, wenn Individuen mögliche Reaktionen anderer in ihre Entscheidung einbeziehen. Dadurch entsteht ein sozialer Erwartungshorizont, der Handlungen lenkt, indem er Anreize für Konformität schafft oder Abweichungen situativ rationalisiert.

So ist das absichtliche Foulspiel eines Verteidigers, um einen durchgebrochenen Stürmer am Torabschluss zu hindern, ein illustrierendes Beispiel für die Spannung zwischen expliziten Regeln und impliziten Rollen- und Verhaltenserwartungen. Formal (explizit) verstößt ein solches Foul gegen die Spielregeln und wird vom Schiedsrichter geahndet und sanktioniert. Gleichzeitig existieren implizite Erwartungen auf Seiten des Trainers, der Mitspieler oder der Fans, die im Rollenbild des Verteidigers verankert sind. Seine Hauptaufgabe ist es, ein Tor zu verhindern, selbst wenn dies Regelverstöße einschließt. Diese implizite Norm erzeugt einen Handlungsspielraum, in dem das abweichende Verhalten situativ rationalisiert werden kann. Die Entscheidung des Verteidigers ist somit nicht nur Ausdruck individueller Motivation, sondern auch Ergebnis einer sozialen Situation und den antizipierten Verhaltenserwartungen, die durch widersprüchliche normative Orientierungen geprägt ist. Doch genau diese soziale Besonderheit macht den Regelbruch plausibel.

Die zuvor dargestellten Verhaltensdeterminanten sowie die empirischen Befunde legen nahe, dass neben rein ökonomischen Anreizen auch sozialpsychologische und normative Aspekte eine zentrale Rolle für die Erklärung menschlichen Handelns spielen. Diese Perspektive wurde in Ansätzen bereits in der weiten Version der Rational-Choice Theorie thematisiert, kann aber detaillierter im Modell des ***homo sociologicus*** zusammengefasst werden (Dahrendorf, 2006; Kroher & Wolbring, 2015; Tao & Au, 2014). Hier wird das Individuum als ein durch soziale Normen, Rollen und institutionalisierte Erwartungen strukturierter Akteur verstanden, dessen Handeln nicht allein instrumentell motiviert ist, sondern wesentlich auf die Aufrechterhaltung eines positiven Selbstbildes sowie die Sicherung sozialer Anerkennung ausgerichtet ist (Dahrendorf, 2006). Das Modell unterstellt, dass Akteure bestrebt sind, ihr Handeln an internalisierten sozialen Normen und Rollenerwartungen auszurichten, um soziale Sanktionen zu vermeiden und Anerkennung zu erlangen.

Während die bisher dargestellten Modelle die Rolle internalisierter Normen und sozialer Erwartungen betonen, stellt sich die Frage, wie Menschen in konkreten Situationen entscheiden, und welche Norm handlungsleitend ist. Hier setzt die Theorie der sozialen Normen an, die differenziert, welche Art von Norm in einer bestimmten Situation das Verhalten determiniert (Cialdini et al., 1990). Dabei wird zwischen deskriptiven Normen, die beschreiben, wie andere Individuen in bestimmten Situationen typischerweise handeln, und injunktiven Normen, die festlegen, was moralisch im kulturellen Kontext geboten ist, unterschieden (Cialdini et al., 1990; Reno et al., 1993). Welche Norm das Verhalten bestimmt, ist dabei abhängig vom sozialen Kontext. In neu erlebten Situationen fehlen häufig klare Orientierungen an injunktiven Normen (Lois & Wessa, 2021). In solchen Fällen können wahrgenommene Regelverstöße im Umfeld, also negative deskriptive Normen, als Handlungsleitfaden wirken und unehrliches Verhalten begünstigen (Cialdini et al., 1990; Gino et al., 2009).

Die Unterscheidung zwischen deskriptiven und injunktiven Normen lässt sich anhand praktischer Beispiele verdeutlichen, in denen unterschiedliche Kontexte zu einer Verschiebung der normativen Orientierung führen. Im Mannschaftssport zeigt sich, wie situative Bedingungen bestimmen, welche Norm handlungsleitend ist. Im Training orientieren sich Spieler in der Regel an injunktiven Normen, die Fairness und regelkonformes Verhalten als Ausdruck von Teamgeist und Respekt betonen. Im Wettkampf hingegen kann die Wahrnehmung, dass Regelverstöße von anderen akzeptiert oder sogar erwartet werden, eine deskriptive Norm etablieren, die den Erfolg über die Einhaltung der Regeln stellt. In einer kritischen Spielsituation kann ein Foul daher nicht nur toleriert, sondern von Mitspielern, Trainern und Fans sogar positiv bewertet werden, weil es dem impliziten Ziel dient, den Sieg zu sichern. Dieses Beispiel verdeutlicht, dass Verhalten nicht allein durch individuelle Präferenzen bestimmt wird, sondern durch die antizipierte soziale Resonanz und die situativen wahrgenommenen Normen. Akteure berücksichtigen, wie ihr Verhalten von relevanten Interaktionspartnern wahrgenommen und bewertet wird. Sie orientieren sich dabei an dem Ziel, ein positives Selbstbild aufrechtzuerhalten und soziale Anerkennung zu erlangen. Der ***homo sociologicus*** agiert somit in einem Spannungsfeld zwischen normativer Konformität und strategischer Selbstdarstellung im Hinblick auf erwartete soziale Rückmeldungen.

Es ist jedoch wichtig anzumerken, dass die dargestellten Modelle des ***homo oeconomicus*** und des ***homo sociologicus*** in der sozialwissenschaftlichen Theorie als analytische Idealtypen von zentraler Bedeutung sind, jedoch in ihrer Erklärungskraft an Grenzen stoßen. Beide Konzepte beruhen auf stark vereinfachten Annahmen, die lediglich in modellhaften Betrachtungen der Realität tragfähig sind. In dynamischen Kontexten erweisen sie sich hingegen als inadäquat, da sie die Fähigkeit realer Akteure zur aktiven Koordination und Anpassung ihres Handelns ausblenden (Weise, 1989). Die dem ökonomischen Modell zugrundeliegende Annahme, Rationalität ausschließlich als strikt egoistische Nutzenmaximierung zu verstehen, ist problematisch und wurde ebenfalls kritisiert (Sen, 1977). Dies verdeutlicht die Notwendigkeit, theoretische Ansätze um sozialpsychologische und normative Dimensionen zu erweitern.

Diese von zweckrationalen Kosten-Nutzen-Abwägungen bis zu normativ eingebetteten Erwartungsstrukturen skizzierten handlungstheoretischen Perspektiven klären, warum (un)ehrliches Verhalten als sozial situiert angesehen werden kann. Das folgende Kapitel widmet sich der Frage, wie Menschen Normkonflikte verarbeiten, ihr moralisches Selbstbild aufrechterhalten und moralische Bilanzierungen vornehmen. Dazu werden theoretische Modelle vorgestellt, die kognitive Rechtfertigungsprozesse, Selbstbewertungstendenzen sowie zeitliche Dynamiken unehrlichen Verhaltens fokussieren.

2.2 Spezifische Modelle

Das vorliegende Kapitel liefert die weitere theoretische Fundierung dieser Dissertation. Anhand von vier Modellen wird eine spezifischere Betrachtung von unehrlichem Verhalten ermöglicht. In Albert Banduras Konzept des Moral Disengagement soll erläutert werden, über welche kognitiven Mechanismen Individuen moralische Selbstsanktionen situativ abschalten und sich für ein für sie bevorzugtes Verhalten entscheiden (Bandura, 1999; Bandura et al., 1996). Einen alternativen Erklärungsansatz liefert das Moral Balance Modell von Mordecai Nisan. Hier wird beschrieben, wie Personen über die Zeit ein Moral-Konto führen, auf dem sie Abweichungen mittels moralischer Lizenzierung (moral licensing) oder moralischer Kompensation (moral cleansing) ausbalancieren (Nisan, 2013; Nisan & Horenczyk, 1990). Diese aus der Sozialpsychologie stammenden Modelle werden durch die soziologisch fundierte Neutralisierungsthese nach Sykes und Matza ergänzt. Sie postuliert, dass Individuen Normen vorrübergehend außer Kraft setzen, ohne dass sie ihre konventionellen Werte grundsätzlich verwerfen müssen (Sykes & Matza, 1957). Auf dieser Basis arbeitet das Kapitel für jedes Modell Stärken und Grenzen heraus und verknüpft die jeweiligen Annahmen mit den im Theorieteil eingeführten Perspektiven.

In der sozial-kognitiven Theorie ***Moral Disengagement*** argumentiert Bandura, dass moralische Selbstsanktionen (z. B. Schuld, Scham) situativ deaktiviert werden können. Dies geschieht über acht miteinander verknüpfte kognitive Mechanismen: moralische, soziale und ökonomische Rechtfertigung („moral, social and economic justification“), euphemistische Sprache („euphemistic language“), vorteilhafter Vergleich („advantageous comparison“), Verschiebung und Diffusion von Verantwortung („displacement/diffusion of responsibility“), Verzerrung oder Verleugnung von Folgen („disregard, distortion and denial of harmful effects“), Dehumanisierung („dehumanization“) und Opferbeschuldigung („attribution of blame“) (Bandura, 2016). Diese Mechanismen wirken an vier unterschiedlichen Dimensionen (Handlung – „behavioral locus“, Verantwortung – „agency locus“, Folgen – „effects locus“, Opfer – „victim locus“) und ermöglichen es Individuen, unehrliches Verhalten mit dem eigenen moralischen Selbstbild zu vereinen (Bandura, 2016). Ein typisches Beispiel kann sich in Rückschlagspielen wie dem Badminton finden. Ein Individuum erkennt, dass ein Ball knapp die Linie touchiert hat, entscheidet sich aber dazu, ihn als außerhalb zu werten, um so den Punkt zu behalten. Diese Entscheidung kann durch moralische Rechtfertigung („Es war so knapp, da kann man das gar nicht genau sehen“), euphemistische Sprache („Das war kein schwerwiegender Betrug, nur ein kleiner Vorteil“), Verzerrung von Folgen („Es geht ja um nichts“) oder einen vorteilhaften Vergleich („Andere würden viel schlimmer schummeln“) erleichtert werden. Mithilfe dieser Mechanismen wird die unehrliche Hand-

lung kognitiv entlastet, ohne dass das eigene Selbstbild eines „fairen Menschen“ grundlegend beschädigt wird. Damit liefert das Modell eine theoretische Grundlage, um zu verstehen, wie Personen Normkonflikte kognitiv auflösen und trotz internalisierter Werte unehrlich handeln können.

Auf Basis der eingangs erwähnten Perspektive sozialen Handelns von Max Weber ergänzt Bandura’s Moral Disengagement das erwartungsorientierte Handeln um kognitive Entkopplungsmechanismen, mit denen Regelbrüche situativ legitimiert werden können. Bezogen auf die Kosten-Nutzen-Abwägung der zweckrationalen Motivation, sowie des Modells des ***homo oeconomicus***, kann dieses Modell die wahrgenommenen und antizipierten psychischen Kosten von unehrlichem Verhalten wie Schuld oder Scham reduzieren. Dadurch erfolgt eine Verschiebung der Kosten- Nutzen-Bilanz. Mithilfe der gleichen Mechanismen kann ebenfalls erklärt werden, wie im Sinne des ***homo sociologicus*** Individuen ihr moralisches Selbstbild wahren, obwohl sie sich unehrlich verhalten.

Während Banduras Ansatz primär in der sozial-kognitiven Psychologie verankert ist und die situativen Mechanismen moralischer Selbstregulation fokussiert, rückt die folgende Perspektive stärker die soziale Einbettung und erlernte Rechtfertigungsmuster in den Vordergrund. Mit der Neutralisierungsthese von Sykes und Matza wird damit ein soziologischer Zugang eingeführt, der nicht die intrapsychische Rekonstruktion, sondern die sozial erlernten, sprachlich-rhetorischen Techniken unehrlichen Verhaltens betont (Sykes & Matza, 1957). Die Neutralisierungsthese geht davon aus, dass unehrliches Verhalten nicht zwingend auf einer stabilen Werteordnung beruht. Vielmehr greifen Individuen auf erlernte Rechtfertigungstechniken zurück, um Schuldgefühle temporär zu neutralisieren und gesamtgesellschaftliche Normen wirksam auszuschalten und so zwischen Ehrlichkeit und Unehrlichkeit zu balancieren (Sykes & Matza, 1957). Klassisch werden die folgenden fünf Techniken unterschieden: (1) Ablehnung der Verantwortung („Ich konnte nicht anders“), (2) Verneinung des Unrechts („Es ist doch niemandem etwas passiert“), (3) Ablehnung des Opfers („Hat es mit seinem Verhalten provoziert“), (4) Verdammung der Verdammenden („Die da oben sind doch selbst korrupt“) sowie (5) Berufung auf höhere Instanzen („Ich musste es für das Team tun“) (Lamnek, 2021). Ein anschauliches Beispiel für Neutralisierungstechniken findet sich im Kontext des Dopings. Ein Athlet, der erwägt, leistungssteigernde Substanzen einzunehmen, könnte seine Entscheidung durch verschiedene rhetorische Strategien legitimieren. So lässt sich die Verantwortung ablehnen („Ich hatte keine Wahl, der Leistungsdruck ist zu groß.“) oder das Unrecht verneinen („Es schadet niemandem. Die Konkurrenz macht es genauso.“). Ebenso ist eine Verdammung der Verdammenden denkbar („Die Funktionäre sind selbst korrupt, warum soll ich mich dann an die Regeln halten?“) oder die Berufung auf höhere Instanzen („Ich tue es für das Team / das Land“). Solche Muster und Selbstnarrative verdeutlichen, wie Athleten moralische Bindungen an Anti-Doping-Normen temporär aussetzen können, ohne ihr Selbstbild als „faire Sportler“ grundsätzlich infrage zu stellen (Yar, 2014).

Hieraus lässt sich folgern, dass die Neutralisierungsthese nach Sykes und Matza eine fehlende Verbindung zwischen intrapsychischen und sozial eingebetteten Erklärungen unehrlichen Verhaltens liefert. Mit diesen rhetorischen Methoden werden die drei Determinanten von sozialem Handeln nach Weber in ihrem subjektiven Sinn kognitiv rekonstruiert und sozial umgeschrieben (Motivation – Berufung auf höhere Instanzen; Situation – Ablehnung der Verantwortung; Verhaltenserwartung – Verdammung der Verdammenden). Auf Basis des ***homo oeconomicus*** wirken die Neutralisierungstechniken als Manipulation auf der Kostenseite. Die Schuld- und Schamkosten werden gesenkt und verschieben so die wahrgenommene Kosten-Nutzen-Bilanz der Individuen in Richtung des unehrlichen Verhaltens. Für den ***homo sociologicus*** fungieren Neutralisierungstechniken als Möglichkeiten des Rollen- und Eindrucksmanagements, die die Aufrechterhaltung eines positiven Selbstbildes und sozialer Anerkennung trotz unehrlichen Verhaltens erlauben.

Während in den beiden genannten Modellen zwar situative Mechanismen der kognitiven Entkopplung und Neutralisierung fokussiert wurden, bleibt die zeitliche Dimension moralischer Entscheidungen weitgehend unberücksichtigt. Hier setzt das Moral Balance Modell von Mordecai Nisan an. Es postuliert, dass Individuen ein „moralisches Konto" führen, auf dem sie Handlungen mit positivem oder negativem moralischem Wert verbuchen (Nisan, 2013; Nisan & Horenczyk, 1990). Solange die Gesamtbilanz über einem subjektiven Schwellenwert bleibt, können begrenzte unehrliche Verhaltensweisen legitimiert werden. Dabei prägen zwei zentrale Mechanismen diesen Prozess. Im „moral licensing" werden vorangegangene moralische Einzahlungen auf das Konto genutzt, um spätere Abweichungen zu erleichtern. Bei der „moral compensation" kehrt sich dieser Wirkmechanismus um. Hier werden unehrliche Verhaltensweisen durch nachfolgende moralische Handlungen ausgeglichen. In einem Beispiel kann diese Kernidee illustriert werden. Ein Spieler, der sich über längere Zeit durch faires Verhalten auszeichnet, kann in einer kritischen Spielsituation ein taktisches Foul als legitim empfinden, weil er zuvor „moralische Einzahlungen" geleistet hat. Diese Lizenzierung erlaubt die Abweichung, ohne das Selbstbild grundlegend zu gefährden. Nach dem Regelbruch kann ebenfalls eine Kompensation erfolgen, etwa durch bewusst faires Verhalten in den folgenden Spielen oder Situationen. Dieses Beispiel verdeutlicht die intertemporale Bilanzierung, die Nisan als Kernmechanismus moralischer Entscheidungen beschreibt.

Damit ergänzt es Banduras Moral Disengagement, das situative Rechtfertigungen erklärt, um eine zeitliche Perspektive. Disengagement klärt das „Wie", Moral Balance das „Wann". Die Neutralisierungsthese von Sykes und Matza liefert zusätzlich die sozial erlernten Techniken, die solche Abweichungen sprachlich plausibel machen. Zusammen zeigen die Modelle, wie kognitive, zeitliche und soziale Mechanismen ineinandergreifen. Für den ***homo oeconomicus*** bedeutet dies, dass „moralisches

Guthaben“ die wahrgenommenen Kosten senkt und die Nutzenbilanz verschiebt. Für den ***homo sociologicus*** dient das Konto als Ressource zur Wahrung des Selbstbildes und sozialer Anerkennung.

Die Messverfahren dieser Dissertation eröffnen Spielräume für kognitive Rechtfertigungen und Neutralisierungen, die moralische Selbstsanktionen unterlaufen. Teilnehmende könnten beispielsweise ihre Handlung sprachlich verharmlosen, sie im Vergleich zu vermeintlich gravierenderem Fehlverhalten anderer relativieren oder die Konsequenzen als unbedeutend einstufen. Auch die Vorstellung, dass niemandem konkret geschadet wird, kann zur Aufrechterhaltung eines positiven Selbstbildes beitragen. Solche Mechanismen könnten insbesondere in Kontexten mit erhöhter Anonymität begünstigt werden, da dort soziale Präsenz und die unmittelbare Angst vor Sanktionen weniger wirksam sind. Die Neutralisierungsthese ergänzt diese Perspektive, indem sie zeigt, dass Individuen auf sozial erlernte Rechtfertigungstechniken zurückgreifen, um Normen temporär außer Kraft zu setzen, ohne ihre grundlegenden Werte zu verwerfen. Techniken wie die Ablehnung der Verantwortung, die Verneinung des Unrechts werden in anonymen oder distanzierten Kontexten besonders plausibel. Das Moral Balance Modell von Nisan legt den letzten theoretischen Baustein dieser Fundierung. Es bietet eine zeitliche Perspektive, um zu erklären, wie moralische Bilanzierungen über längere Zeiträume wirken. Damit kann das Modell genutzt werden, um die intrapersonelle Stabilität unehrlichen Verhaltens über die Zeit oder verschiedene Aufgaben hinweg zu verstehen.

Die bisherigen Ausführungen dienten der Darstellung grundlegender theoretischer Perspektiven sowie ergänzender konzeptioneller Überlegungen, die das Fundament dieser Arbeit bilden. Sie skizzieren die zentralen Annahmen, Modelle und Mechanismen, die für das Verständnis unehrlichen Verhaltens relevant sind, ohne jedoch die spezifischen theoretischen Bezüge der einzelnen empirischen Beiträge vorwegzunehmen. Diese werden jeweils in den Überleitungen und Zusammenfassungen der Beiträge vertieft. Im Folgenden richtet sich der Fokus zunächst auf die Betrachtung spezifischer Einflussfaktoren von unehrlichem Verhalten.

2.3 Soziale und psychologische Determinanten Einflussfaktoren auf unehrliches Verhalten

Die bisher dargestellten theoretischen Modelle liefern grundlegende Erklärungsansätze für unehrliches Verhalten, lassen jedoch keine spezifischen Schlussfolgerungen darüber zu, welche konkreten sozialen und personellen Determinanten dieses Verhalten beeinflussen. Sie skizzieren allgemeine Mechanismen wie Kosten-Nutzen-Abwägungen, normative Erwartungen oder kognitive Rechtfertigungsprozesse, ohne deren empirische Wirksamkeit in unterschiedlichen Kontexten eindeutig zu bestimmen. Die empirische Forschung zeigt hingegen, dass bestimmte Faktoren eine zentrale Rolle spielen. Diese Diskrepanz zwischen theoretischer Grundlage und empirischer Spezifität markiert ein zentrales Theoriedesiderat, das in der vorliegenden Arbeit adressiert wird.

Die Dissertation schließt diese Lücke, indem sie theoretische Annahmen durch experimentelle Evidenz präzisiert und erweitert. Die Trennung von Entscheidungs- und Intensitätsebene sowie die Analyse individueller Verhaltensdaten ermöglichen eine differenzierte Betrachtung, die über aggregierte Befunde hinausgeht. Damit wird die Schnittstelle zwischen Theorie und Empirie gestärkt. Es wird gezeigt, unter welchen Bedingungen normative Bindung, moralische Selbstregulation und kognitive Prozesse tatsächlich wirksam werden.

Vor diesem Hintergrund ist es notwendig, die leitende Forschungsfrage (durch welche sozialen, kontextuellen und personellen Determinanten wird unehrliches Verhalten beeinflusst) detaillierter aufzubereiten. Die folgenden Unterkapitel widmen sich daher den zentralen Einflussfaktoren, die in den empirischen Beiträgen untersucht wurden. Dabei werden sowohl personale Merkmale wie Geschlecht und Persönlichkeitseigenschaften als auch kontextuelle Bedingungen wie soziale Präsenz, Beobachtbarkeit und Anonymität betrachtet. Diese Faktoren sind nicht nur theoretisch relevant, sondern auch empirisch bedeutsam, da sie die wahrgenommene Kosten-Nutzen-Bilanz, die Aktivierung normativer Erwartungen und die kognitiven Anforderungen moralischer Entscheidungen beeinflussen können. Bezogen auf die Forschungsfrage ist es entscheidend, diese Determinanten nicht isoliert, sondern in ihrem Zusammenspiel zu verstehen, da sich unehrliches Verhalten in der Interaktion von individuellen Eigenschaften und kontextuellen Bedingungen unterschiedlich entfalten kann.

2.3.1 Geschlecht

Die Frage, ob und warum sich Männer und Frauen in ihrem unehrlichen Verhalten unterscheiden, wird in der Literatur kontrovers diskutiert. Zwar liefern die grundlegenden handlungstheoretischen Modelle keine eindeutige Erklärung für geschlechtsspezifische Unterschiede, dennoch existieren theoretische Ansätze, die verschiedene Gründe fokussieren.

Ein zentraler Erklärungsrahmen ist die Sozialrollentheorie. Sie geht davon aus, dass Frauen stärker in gemeinschaftliche Rollen sozialisiert werden und dadurch eine höhere Bindung an normative Erwartungen entwickeln (Eagly & Wood, 2012). Diese geschlechtsspezifische Sozialisation führt dazu, dass Frauen Regeln und Normen tendenziell strenger befolgen, während Männer weniger restriktive Bindungen erfahren (Ward & Beck, 1990). Bestätigend konnte gezeigt werden, dass Frauen bei unehrlichem Verhalten häufiger auf Neutralisierungstechniken zurückgreifen, um moralische Selbstsanktionen zu reduzieren. Während die Ausprägung solcher Techniken bei Männern keinen Einfluss auf das Verhalten hatte, verhielten sich Frauen mit niedrigen Neutralisierungswerten signifikant ehrlicher als Frauen mit hohen Werten (Ward & Beck, 1990). Dies legt nahe, dass Frauen aufgrund ihrer Sozialisation stärker auf kognitive Rechtfertigungen angewiesen sind, um Normabweichungen zu legitimieren (Chowdhury et al., 2021).

Ergänzend wird angenommen, dass Frauen häufiger prosoziale Werte internalisieren und eine ausgeprägtere moralische Identität besitzen, die als interner Kontrollmechanismus wirkt (Grosch & Rau, 2017; Kennedy et al., 2017). Dies geht mit einem erhöhten emotionalen Unbehagen bei Normbrüchen einher (Cohen et al., 2011) und verstärkt deshalb die reputationsbezogenen Kosten unehrlichen Verhaltens. Außerdem reagieren Frauen intensiver auf soziale Selbstbildkosten und streben aus diesem Grund stärker danach, von relevanten Interaktionspartnern als positiv wahrgenommen zu werden (Aquino & Reed, 2002; Levine et al., 2018). Hinzu kommt eine höhere Risikoaversion, die die Bereitschaft zur Normabweichung mindern kann (Croson & Gneezy, 2009; Eckel & Grossman, 2008). Zusätzlich zeigen Frauen eine höhere soziale Wertorientierung und damit eine geringere Neigung zu unehrlichem Verhalten, was zum Teil auf Unterschiede in der Emotionsverarbeitung zugrückgeführt wird (Lohse & Qari, 2021).

Neben sozialisationstheoretischen Ansätzen wird eine evolutionspsychologische Perspektive diskutiert, die geschlechtsspezifische Unterschiede in unehrlichem Verhalten auf unterschiedliche Selektionsprozesse zurückführt. Die Sexual-Selection-Theorie postuliert, dass Männer historisch stärkere Anreize und geringere Kosten für Täuschung hatten, was sich in einer höheren Bereitschaft zur strategischen Selbstpräsentation niederschlägt (Kennedy & Kray, 2022). Es wurde gezeigt, dass Männer häufiger unehrliches Verhalten über persönliche Leistungen zeigen, während von Frauen physische Attraktivität vermehrt verzerrt dargestellt wird (Kolesnyk et al., 2021).

Die dargestellten theoretischen Überlegungen verdeutlichen die Vielschichtigkeit von Geschlechtsunterschieden in unehrlichem Verhalten. Es scheint, dass eine Theorie für sich keine adäquate Erklärungsgrundlage liefern kann. Vielmehr ist es ein Zusammenspiel von Sozialisationsprozessen, kulturellen Normen und evolutionspsychologischen Faktoren. Wie im Folgenden dargestellt wird, bleibt möglicherweise aus diesen komplexen Interaktionen die empirische Befundlage weitgehend inkonsistent.

Meta-Analysen berichten, dass Männer insgesamt häufiger unehrlich handeln und sowohl selbstbezogene als auch altruistische Lügen in höherem Maße zeigen (Capraro, 2018; Gerlach et al., 2019). Andere Studien konnten jedoch keine Geschlechtsunterschiede finden, oder berichten von höherem unehrlichem Verhalten bei Frauen (Clot et al., 2014; Ruffle & Tobol, 2014). Kontextfaktoren wie die Planbarkeit unehrlichen Verhaltens, die Höhe der Anreize oder die soziale Bedeutung der Handlung beeinflussen die Richtung und Stärke geschlechtsspezifischer Effekte (Chowdhury et al., 2021; Muñoz García et al., 2021). Geschlechtsunterschiede verschwinden, wenn das unehrliche Verhalten entsprechend geplant und vorbereitet werden kann (Chowdhury et al., 2021). Dies steht möglicherweise in Verbindung mit der vermehrten Nutzung der Neutralisierungstechniken bei Frauen (Ward & Beck, 1990). Frauen werden oft als vertrauenswürdiger eingeschätzt, während Männer eher

als weniger ehrlich gelten (Lohse & Qari, 2021; Schniter & Shields, 2020). Diese Erwartungen wirken wie soziale Regeln und beeinflussen, wie Menschen miteinander kommunizieren. Sie bestimmen nicht nur die Strategien, die Personen in Gesprächen wählen, sondern auch, wie unehrliches Verhalten bewertet wird.

Zusammengenommen legen diese Überlegungen dar, dass Geschlecht nicht als generelle Determinante von unehrlichem Verhalten betrachtet werden kann. Vielmehr wirkt das Geschlecht als Moderatorvariable, die in Abhängigkeit von sozialen, kulturellen und situativen Einflüssen variierende Effekte erzielt. Auffällig ist, dass die meisten der Studien Designs nutzen, bei denen Daten lediglich auf aggregierter Ebene gewonnen werden. Eine verhaltenszentrierte Beobachtung auf individueller Basis über mehrere Items könnte detailliertere Ergebnisse liefern und weitere Nuancen aufdecken. Aufgrund der methodischen Limitationen früherer Designs und den empirischen Inkonsistenzen wird Geschlecht in dieser Dissertation isoliert und in Kombination mit weiteren Faktoren als eine zentrale personelle Determinante untersucht.

2.3.2 Persönlichkeitseigenschaften

Die Untersuchung unehrlichen Verhaltens erfordert eine differenzierte Betrachtung individueller Unterschiede, da nicht alle Menschen gleichermaßen anfällig für moralische Normverletzungen sind. Empirische Befunde zeigen, dass stabile Persönlichkeitsmerkmale einen Einfluss auf unehrliches Verhalten haben (Hilbig et al., 2024; Hilbig & Zettler, 2015; S. D. Lee et al., 2020; Plessen et al., 2020).

Dispositionelle und genetische Befunde stützen die Annahme, dass moralische Standards relativ stabil sind und nicht ausschließlich durch situative Einflüsse bestimmt werden. Studien zeigen, dass genetische Faktoren einen signifikanten Anteil an individuellen Unterschieden in moralischem Verhalten haben (Loewen et al., 2013; Shen et al., 2016). Unehrliches Verhalten kann demnach als Konstrukt einer stabilen Persönlichkeitseigenschaft verstanden werden (Thielmann et al., 2025). Persönlichkeitsfaktoren beeinflussen außerdem die psychologischen Mechanismen, die zur Rationalisierung von Normverletzungen beitragen. Sie wirken als Kosten-Nutzen-Manipulatoren, indem sie die wahrgenommenen Risiken und Vorteile unehrlichen Verhaltens sowie die Bereitschaft zur Nutzung von Rechtfertigungsstrategien wie moral disengagement oder Neutralisierungstechniken beeinflussen (Bandura, 1999, 2002; Rengifo & Laham, 2022; Simola et al., 2020).

Ein zentraler Aspekt ist die moralische Identität, die als interner Kontrollmechanismus fungiert. Personen mit stark ausgeprägter moralischer Identität zeigen eine geringere Tendenz zur Nutzung von Rechtfertigungsstrategien, während eine schwache moralische Identität die Anfälligkeit für moralische Disengagement-Prozesse erhöht (Bandura, 1999; Kennedy et al., 2017). Damit wird deutlich, dass

Persönlichkeitseigenschaften die kognitiven Prozesse beeinflussen, die unehrliches Verhalten ermöglichen.

Empirische Befunde bestätigen diese Annahmen. Zwischen unehrlichem Verhalten und Selbstkontrolle und Integrität besteht ein negativer Zusammenhang. Individuen mit hohen Ausprägungen in diesen Merkmalen handeln seltener unehrlich (Gotlib & Converse, 2010). Eine Meta-Analyse verdeutlicht zudem, dass unehrliches Verhalten konsistent positiv mit dunklen Persönlichkeitsmerkmalen und negativ mit einigen Faktoren des HEXACO-Modells (K. Lee & Ashton, 2004), wie Offenheit, Gewissenhaftigkeit, Verträglichkeit sowie Ehrlichkeit-Bescheidenheit (Honesty-Humility) assoziiert ist (Hilbig & Zettler, 2015; S. D. Lee et al., 2020; Plessen et al., 2020). Unter den untersuchten Dimensionen erweist sich Honesty-Humility als der robusteste Prädiktor (Hilbig et al., 2024; Hilbig & Zettler, 2015).

Zusammenfassend verdeutlichen diese Befunde, dass unehrliches Verhalten durch ein komplexes Zusammenspiel stabiler Persönlichkeitsmerkmale, kognitiver Rechtfertigungsprozesse und moralischer Identität bestimmt wird. Persönlichkeitsfaktoren nehmen dabei eine zentrale Stellung ein, da sie sowohl die intrapersonelle Stabilität unehrlichen Verhaltens erklären als auch die psychologischen Mechanismen beeinflussen, die dieses Verhalten ermöglichen. Damit ist die Berücksichtigung von Persönlichkeitsfaktoren von zentraler Bedeutung, da sie eine theoretische Grundlage für die Erklärung individueller Unterschiede in unehrlichem Verhalten liefern.

3.3.3 Soziales Setting

Das soziale Setting stellt eine zentrale Rahmenbedingung für menschliches Verhalten dar und beeinflusst maßgeblich die Wahrscheinlichkeit unehrlicher Handlungen. Die Umgebung, in der Entscheidungen getroffen werden, bestimmt, in welchem Ausmaß soziale Normen wirksam sind (Cartwright & Xue, 2020; Lieberman & Schroeder, 2020). Die Bedeutung dieser Kontextvariable wird durch theoretische Ansätze wie die Theorie der sozialen Distanz und Konzepte der sozialen Präsenz und Anonymität unterstrichen. Soziale Distanz beschreibt das Ausmaß wahrgenommener räumlicher und emotionaler Entfernung zwischen Interaktionspartnern (Hoffmann et al., 1996). Eine geringe soziale Distanz, wie sie in Präsenzinteraktionen vorliegt, erhöht die normative Kontrolle und die Sorge um Reputation, während eine hohe soziale Distanz, wie in anonymen Online-Umgebungen, diese Kontrollmechanismen abschwächt (Cohn et al., 2022; Varvarigos & Xin, 2020).

Die Theorie des Online-Disinhibition-Effekts beschreibt ergänzend hierzu, wie digitale Kontexte durch Anonymität und reduzierte soziale Präsenz die Hemmschwelle für Normverletzungen senken (Suler, 2004). In Online-Settings fehlt unmittelbares Feedback, wodurch Reputationsbedenken und

die Sorge um Sanktionen abnehmen. Dies verschiebt die Kosten-Nutzen-Abwägung zugunsten des Eigeninteresses und erleichtert die Durchführung unehrlichen Verhaltens (Cartwright & Xue, 2020; Dickinson & McEvoy, 2020).

In vollständig anonymen Online-Umgebungen wurden signifikant höhere Raten unehrlichen Verhaltens beobachtet als in überwachten Laborbedingungen (Dickinson & McEvoy, 2020; Kroher & Wolbring, 2015). Empirische Befunde zeigen weiter, dass die physische Präsenz anderer Personen einen starken Einfluss auf die Einhaltung moralischer Normen ausübt. Bereits die Möglichkeit, beobachtet zu werden, steigert die öffentliche Selbstaufmerksamkeit und die Sorge um soziale Bewertung, wodurch unehrliches Verhalten reduziert wird (Pfattheicher et al., 2019; van Bommel et al., 2012). Auch ohne das Vorhandensein von Sanktionen wirkt die Anwesenheit anderer als Hemmfaktor für unehrliches Verhalten, indem internalisierte Normen stärker aktiviert werden (Mazar et al., 2008; Nieper et al., 2025). Zusätzlich konnte gezeigt werden, dass reale soziale Präsenz eine stärkere normative Wirkung entfaltet als symbolische Reize wie Bilder oder Avatare (Cai et al., 2015; Oda et al., 2015).

Neben der generellen Wirkung des sozialen Settings treten geschlechtsspezifische Unterschiede auf. Männer zeigen in Online-Umgebungen höheres unehrliches Verhalten als in Präsenzbedingungen (Waeber, 2021). Diese Unterschiede lassen sich durch unterschiedliche Sensibilität gegenüber sozialen Hinweisreizen und Reputationskosten erklären. Frauen weisen im Durchschnitt eine stärkere Orientierung an sozialen Normen und eine höhere emotionale Belastung bei Normverletzungen auf, was ihre Resistenz gegenüber situativen Versuchungen erhöht (Cohen et al., 2011; Eagly & Wood, 2012). Diese Befunde unterstreichen die Bedeutung kontextueller und individueller Faktoren für die Erklärung unehrlichen Verhaltens.

In Laborumgebungen, in denen die Identität der Teilnehmenden bekannt ist und physische Beobachtung möglich bleibt, wird normkonformes Verhalten demnach gefördert, während Online-Umgebungen durch erhöhte Anonymität und fehlende soziale Hinweisreize die Selbstregulation schwächen und die Wahrscheinlichkeit unehrlichen Verhaltens erhöhen. Damit ist die Berücksichtigung der sozialen Umgebung für die vorliegende Dissertation essenziell. Die Betrachtung mehrerer Nuancen der Anonymität und Beobachtbarkeit von Probanden erlaubt Rückschlüsse auf die situativen Rahmenbedingungen, in denen unehrliches Verhalten entsteht. Die Arbeit zielt zusätzlich darauf ab, Kombinationen verschiedener Determinanten zu betrachten und auf Basis individueller Verhaltensdaten zu analysieren. Das soziale Setting stellt dabei eine bedeutsame Komponente dar, weil die Wirksamkeit von normativen Kontrollmechanismen, sowie die Kosten-Nutzen-Bilanz beeinflusst wird.

Die dargestellten Einflussfaktoren verdeutlichen, dass unehrliches Verhalten durch ein Zusammenspiel individueller Dispositionen und kontextueller Bedingungen geprägt ist. Sie bilden die Grundlage für die empirischen Analysen der eigenen Beiträge. Im nächsten Abschnitt werden die methodischen Zugänge vorgestellt, die eine differenzierte Untersuchung dieser Determinanten ermöglichen.

3 Methodische Zugänge

3.1 Die Messung unehrlichen Verhaltens

Unehrliches Verhalten ist wie bereits dargestellt ein komplexes Phänomen, das sich in vielen sozialen und gesellschaftlichen Kontexten findet und eine Vielzahl von Terminologien umfasst. Diese Breite spiegelt sich nicht nur in den formulierten theoretischen Ansätzen wider, sondern ist ebenso in den methodischen Zugängen der empirischen Forschung erkennbar. In der Studienlage hat sich ein breites Spektrum an Messverfahren etabliert, das von ökonomischen Experimenten über psychologische Labordesigns bis hin zu Feldstudien reicht (Gerlach & Teodorescu, 2022; Rosenbaum et al., 2014).

Die Heterogenität dieser Verfahren ist sowohl eine Stärke als auch eine Herausforderung. Sie erlaubt es, unterschiedliche Aspekte unehrlichen Verhaltens zu beleuchten, erschwert jedoch die Vergleichbarkeit von Befunden und die Ableitung konsistenter theoretischer Schlussfolgerungen. Während einige Ansätze primär auf aggregierte Daten setzen, ermöglichen andere die Erfassung individueller Unterschiede oder situativer Dynamiken. Die nachfolgenden Abschnitte konzentrieren sich zunächst auf die gängigsten Methoden, die in der Literatur zur Messung unehrlichen Verhaltens dominieren. Dabei werden sowohl Sender-Empfänger Spiele (Sender-Receiver Games) als auch zufallsbasierte und leistungsbasierte Selbstberichtsmaße thematisiert. Anschließend werden die methodischen Besonderheiten der vorliegenden Arbeit herausgearbeitet.

3.1.1 Sender-Empfänger Spiele

Sender-Receiver Games sind eine etablierte experimentelle Methode zur Analyse von unehrlichem Verhalten in Interaktionen von zwei Parteien (Erat & Gneezy, 2012; Gneezy, 2005). Der Sender kennt die Auszahlungen zweier Optionen, die sich typischerweise in ihrer Vorteilhaftigkeit für Sender und Empfänger unterscheiden, während die Gesamtauszahlung konstant bleibt. Der Sender übermittelt eine Nachricht, wobei der Empfänger die tatsächlichen Auszahlungen nicht kennt und auf Basis der Nachricht entscheidet. Das Verfahren ist theoretisch bedeutsam, da die Entscheidung zur Lüge eindeutig und überprüfbar ist, wodurch psychologische Kosten wie Schuldgefühle sowie soziale Normen relevant werden (Mazar et al., 2008; Rosenbaum et al., 2014). Damit lassen sich mit Hilfe dieses Messverfahren Rückschlüsse auf individueller Ebene ziehen.

3.1.2 Selbstberichtsverfahren

Zu den klassischen ökonomischen Methoden zur Messung unehrlichen Verhaltens zählen Zufallsexperimente, bei denen Teilnehmende das Ergebnis eines selbst durchgeführten Zufallsereignisses berichten. Typische Beispiele sind ein Münzwurf (Bucciol & Piovesan, 2011) oder ein Würfelexperiment (Fischbacher & Föllmi-Heusi, 2013). Sie basieren auf der Idee, dass Teilnehmende das Ergebnis eines

Zufallsexperiments selbst berichten, wobei die berichtete Information unmittelbar mit einem monetären Anreiz verknüpft ist. Die Versuchspersonen wissen im Vorfeld, dass bestimmte Ergebnisse höhere Auszahlungen generieren, was ihnen die Möglichkeit eröffnet, im Sinne einer rationalen Kosten-Nutzen-Abwägung zu handeln. Beide Designs basieren auf dem Prinzip der Selbstberichterstattung unter vollständiger Anonymität. Das heißt, dass weder andere Teilnehmende noch die Versuchsleiter das tatsächliche Ergebnis beobachten können (Gneezy et al., 2013). Dadurch besteht kein Risiko für die Individuen, bei unehrlichem Verhalten entdeckt zu werden, was die wahrgenommenen Kosten innerhalb der Rational-Choice-Theorie verringert. Jedoch lassen sich aufgrund der Anonymität lediglich Daten auf aggregierter Ebene schätzen, indem die berichtete Verteilung mit der theoretischen Gleichverteilung verglichen wird (Rosenbaum et al., 2014). Für belastbare Schätzungen sind daher große Stichproben erforderlich (Gerlach et al., 2019). Die externe Validität ist begrenzt, da die Messungen stark vereinfachte Entscheidungssituationen ohne Leistungskontext abbilden und soziale Interaktionen sowie normative Erwartungen weitgehend ausblenden.

Neuere Weiterentwicklungen ermöglichen eine Messung mittels dieser Methoden auch auf der individuellen Ebene. So ermöglichen technische Lösungen wie mit Bluetooth verbundene Würfel die verdeckte Erfassung des tatsächlichen Ergebnisses (Yaniv et al., 2019). Darüber hinaus wurden statistische Ansätze entwickelt, die individuelle Unterschiede in unehrlichem Verhalten erfassen, ohne die Anonymität aufzugeben (Heck et al., 2018; Moshagen & Hilbig, 2017). Solche Modelle erlauben es, Varianz auf individueller Ebene zu berücksichtigen und Konsistenz über Situationen hinweg zu analysieren.

Insgesamt sind Münzwurf- und Würfelwurf-Verfahren wertvolle Instrumente zur Untersuchung grundlegender Mechanismen unehrlichen Verhaltens, stoßen jedoch an Grenzen, wenn es um die Erfassung komplexer sozialer Dynamiken und individueller Unterschiede geht.

Der Matrix Task gehört ebenfalls zu den Selbstberichtsverfahren, unterscheidet sich jedoch grundlegend von zufallsbasierten Ansätzen wie Münz- oder Würfelwurf, da er auf einer leistungs- und fähigkeitsbasierten Aufgabe beruht (Mazar et al., 2008). Die Teilnehmenden erhalten ein Blatt mit mehreren Matrizen, die jeweils aus zwölf dreistelligen Zahlen bestehen. Eine Matrize gilt als gelöst, wenn zwei Zahlen gefunden werden, deren Summe exakt zehn ergibt. Auf einem Antwortbogen geben die Individuen lediglich an, wie viele der Matrizen sie lösen konnten. Für jede korrekt gelöste Matrize wird eine monetäre Belohnung gewährt, wodurch ein Anreiz für unehrliches Verhalten entsteht. Da nur der Antwortbogen eingesammelt wird und nicht die eigentliche Bearbeitung der Matrizen, sind die Entdeckungs- und Sanktionskosten minimal, was die Kosten-Nutzen-Abwägung im Sinne der Rational-Choice-Theorie erneut zugunsten unehrlichen Verhaltens verschiebt (Rosenbaum et al., 2014).

Die Messung unehrlichen Verhaltens kann sowohl auf aggregierter als auch auf individueller Ebene erfolgen. In der klassischen aggregierten Variante wird die Aufgabe mit einer Experimental- und einer Kontrollgruppe durchgeführt. Während die Kontrollgruppe sowohl den Antwortbogen als auch die bearbeiteten Matrizen zur Überprüfung einreicht, übermittelt die Experimentalgruppe ausschließlich den Antwortbogen. Unehrlichkeit wird hier indirekt erfasst, indem die durchschnittlichen Ergebnisse beider Gruppen verglichen werden. Da die Matrizen in der Regel lösbar sind, erlaubt dieser Ansatz nur eine Schätzung der Prävalenz unehrlichen Verhaltens auf aggregierter Ebene (Gerlach et al., 2019). Andere Versionen des Matrix Tasks ermöglichen hingegen die Erfassung individueller Daten, indem die Aufgabenblätter mit individuellen Codes versehen werden, sodass die berichtete Anzahl gelöster Matrizen mit der tatsächlichen Leistung abgeglichen werden kann (Rosenbaum et al., 2014).

Ein wesentliches methodisches Problem des Matrix-Tasks besteht in der Möglichkeit unbeabsichtigter Fehler. Teilnehmende können fälschlicherweise annehmen, eine Matrize korrekt gelöst zu haben, obwohl ein unbewusster Rechenfehler vorliegt. Solche Fälle werden in der Auswertung als unehrliches Verhalten klassifiziert, obwohl keine intentionale Täuschung handlungsleitend ist (Heyman et al., 2020). Trotz dieser Limitationen bietet der Matrix Task gegenüber zufallsbasierten Experimenten einen höheren Realitätsbezug, da er eine Leistungssituation simuliert, in der unehrliches Verhalten nicht nur durch monetäre Anreize, sondern auch durch den Wunsch nach Kompetenzdarstellung motiviert sein kann.

3.1.3 Unlösbare Aufgaben

Die Messmethoden der unlösbaren Aufgaben wurden entwickelt, um die methodischen Schwächen klassischer Zufallsexperimente und des Matrix-Tasks als leistungsbasiertes Instrument zu überwinden. In diesen Verfahren erhalten Teilnehmende eine Reihe von Aufgaben des gleichen Typs, von denen ein Teil lösbar ist, während andere keine Lösung haben. Die Probanden müssen dabei nicht die konkrete Lösung angeben, sondern lediglich berichten, ob sie das jeweilige Item gelöst haben. Unehrliches Verhalten wird in diesem Ansatz als jede behauptete Lösung eines tatsächlich unlösbaren Items definiert. Da die Teilnehmenden davon ausgehen, dass alle Aufgaben lösbar sind, entsteht eine Gelegenheit sich unehrlich zu verhalten. Gleichzeitig erlaubt das Design den Forschenden, unehrliches Verhalten sowohl auf der Ebene einzelner Items als auch auf Personenebene zu identifizieren, wodurch sich differenzierte Analysen zu Entscheidungs- und Intensitätsebenen unehrlichen Verhaltens durchführen lassen. Klassische Varianten dieser Verfahren nutzten beispielsweise Anagramm-Puzzles, bei denen aus einem Buchstabensalat ein korrektes Wort gebildet werden soll (Chou, 2015; Gerlach & Teodorescu, 2022; Karabenick & Srull, 1978). Diese Aufgaben wurden jedoch kritisiert, da sie stark von

sprachlichen Kompetenzen abhängen und somit für bestimmte Populationen ungeeignet sind (Liu et al., 2021).

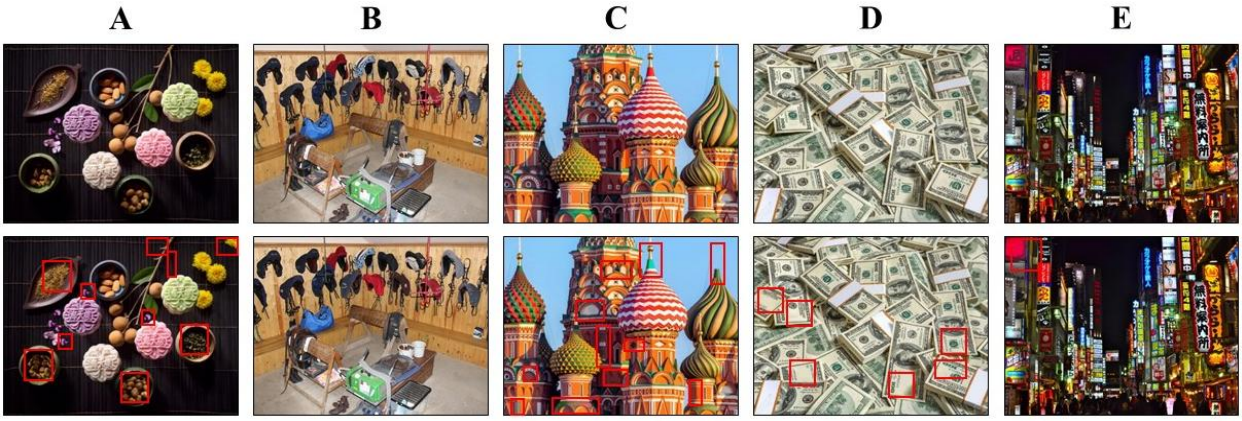
Vor diesem Hintergrund wurde in den empirischen Beiträgen dieser Arbeit (mit Ausnahme von Beitrag 2) eine nicht-verbale Variante des Messverfahrens eingesetzt, das von Liu et al. (2021) entwickelt wurde. Der Difference Spotting Task (DST) kombiniert die Vorteile der unlösbaren Aufgabe mit einer breiten Anwendbarkeit über verschiedene Alters- und Bildungskontexte hinweg. Im folgenden Kapitel wird diese Methode exemplarisch vorgestellt, ihre zentralen Merkmale und Vorteile gegenüber anderen Verfahren erläutert und ihre Bedeutung für die Überprüfbarkeit der Ergebnisse dieser Dissertation herausgearbeitet.

3.2 Der Difference-Spotting Task

Der DST ist eine nicht verbale Weiterentwicklung unlösbarer Aufgaben, die das methodische Spannungsfeld zwischen sicherem Täuschen aus Sicht der Teilnehmenden und überprüfbarer Unehrlichkeit aus Sicht der Forschenden auflöst (Liu et al., 2021). In dieser Computerversion der Aufgabe werden Probanden gebeten, Unterschiede zwischen zwei ähnlichen Bildern festzustellen. Dabei ist mit 40 Items die Hälfte der Bildpaare tatsächlich lösbar (Bilder unterscheiden sich an 10 verschiedenen Stellen; Abbildung 1 A), während die anderen 40 Bildpaare unlösbar sind und damit keine Unterschiede beinhalten (Abbildung 1 B). Die Probanden werden jedoch instruiert, dass jedes Bildpaar lösbar ist und zu einer von drei Schwierigkeitskategorien zählt. In der leichten Kategorie sind in jedes Bildpaar zehn Unterschiede integriert (Abbildung 1 C), während in der mittleren Kategorie sechs (Abbildung 1 D) und in der schweren Kategorie lediglich ein Unterschied eingearbeitet wurde (Abbildung 1 E).

Nach der Präsentation jedes Bildpaares geben die Probanden lediglich an, ob sie mindestens einen Unterschied identifizieren konnten („✓ Ja“) oder nicht („✗ Nein“). Es wird explizit darauf hingewiesen, dass weder die Anzahl noch die Position der gefundenen Unterschiede dokumentiert werden muss. Diese Instruktion dient dazu, eine Situation zu schaffen, in der die Übertreibung der eigenen Leistung ermöglicht wird, ohne dass ein objektiver Nachweis erforderlich ist. Vor Beginn der Aufgabe werden die Teilnehmenden angehalten, ihre Entscheidung sorgfältig zu prüfen und eine „Ja“-Antwort nur dann zu wählen, wenn sie sich sicher sind, tatsächlich einen Unterschied erkannt zu haben. Eine „Nein“-Antwort hat keinerlei Konsequenzen für die weitere Durchführung.

Abbildung 1. Beispiele der visuellen Stimuli des DST (angepasst von Liu et al., 2021)



Anmerkung. (A) Beispiel eines lösbaren Items mit 10 Unterschieden. (B) Beispiel eines unlösbaren Items mit keinen Unterschieden. Probanden werden instruiert, dass neben der (C) leichten Kategorie (zehn Unterschiede) zwei weitere Stufen existieren. (D) Mittlere Kategorie mit sechs Unterschieden und (E) schwere Kategorie mit lediglich einem Unterschied. Die Instruktionen unterscheiden sich damit von den tatsächlich genutzten Items. Zur visuellen Erleichterung wurden die Unterschiede der Items in den vorliegenden Beispielbildern mittels roter Markierungen hervorgehoben.

Dieses Vorgehen ermöglicht die Erfassung unehrlichen Verhaltens nicht nur auf aggregierter Ebene, sondern präzise auf personaler Itembasis. Dadurch können sowohl die Entscheidungsebene (mindestens eine „✓ Ja“-Antwort bei unlösbaren Items) als auch die Intensitätsebene (Summe der „✓ Ja“-Antworten bei unlösbaren Items) analysiert werden. Als Anreiz für potenziell unehrliches Verhalten wird jede bestätigte Differenz mit einem monetären Bonus vergütet, der unmittelbar nach der Antwort angezeigt wird. Abbildung 2 zeigt exemplarisch den Verlauf eines einzelnen Durchgangs. Die Reihenfolge der Bildpaare (lösbare und unlösbare Items) wird für jede Versuchsperson randomisiert, um Reihenfolgeeffekte zu vermeiden. Des Weiteren wurde aufgrund der hohen Anforderungen an Kognition und visuelle Aufmerksamkeit sowie zur Vermeidung von ehrlichen Fehlern eine standardisierte Pause von 60 Sekunden nach 40 Trials integriert.

Ein zentrales Merkmal des DST ist seine Unabhängigkeit von Sprach- und Rechenkompetenzen. Anders als bei Anagrammaufgaben oder im Matrix Task wird hier Wahrnehmungsleistung abgefragt. Dies führt dazu, dass der DST in heterogenen Populationen eingesetzt werden kann. Liu und Kollegen berichten zudem eine hohe interne Konsistenz, deutliche Itemdiskrimination bei unlösbaren Items sowie eine sehr geringe Tendenz zu Fehlern bei lösbaren Items, da diese bewusst leicht gewählt wurden. Zudem zeigen sich konvergente Zusammenhänge mit anderen Unehrlichkeitsmaßen bei zugleich höherer interner Reliabilität, was die Validität und Praxistauglichkeit stützt (Liu et al., 2021).

Abbildung 2. Sequenz eines einzelnen Durchgangs des DST mit der Anzeige der Auszahlung bei einer „Ja“ Antwort (angepasst von Liu et al., 2021)

Anmerkung. Begonnen wird mit einer Fixation (1 Sekunde). Darauffolgend wird das zu lösende Bildpaar angezeigt (8 Sekunden). Die Antwortauswahl ist nicht zeitlich begrenzt und abhängig vom Resultat wird der korrespondierende Gewinn angezeigt (1 Sekunde)

Damit weist die vorgestellte Version des DST mehrere Vorteile gegenüber den bisherigen Methoden zur Messung unehrlichen Verhaltens auf. Während Zufallsaufgaben in der Regel nur Abweichungen von theoretischen Gleichverteilungen auf Gruppenebene zulassen, erlaubt der DST die exakte Zuordnung jeder behaupteten Lösung zu einem unlösbaren Item. Dadurch werden Inferenzfehler reduziert, Effekte experimenteller Manipulationen werden weniger durch Rauschen gedämpft, und es lassen sich sowohl Auftreten als auch Ausmaß der Unehrlichkeit individuell bestimmen. Diese Differenzierung erlaubt eine weitaus detailliertere Betrachtung von unehrlichem Verhalten und kann so dazu beitragen, Nuancen von beeinflussenden Determinanten aufzudecken. Zudem besteht die Chance, Inkonsistenzen in bisherigen Studien zu adressieren. Außerdem minimiert der DST das Problem ehrlicher Fehler. Beim Matrix Task können Personen irrtümlich glauben, eine Aufgabe korrekt gelöst zu haben, was den Messwert der Unehrlichkeit verfälschen kann. Im DST wird dieses Risiko systematisch verringert, weil in den lösbaren Items sehr einfache Unterschiede verwendet werden und in den unlösbaren Items tatsächlich keine Unterschiede existieren. Befunde aus Validierungsstudien dokumentieren entsprechend eine sehr geringe Fehlerrate bei lösbaren Items sowie exzellente interne Konsistenz der unlösbaren Items als Indikator für Unehrlichkeit (Liu et al., 2021). Außerdem bietet der DST eine hohe Anwendbarkeit über Kontexte und Populationen hinweg, da er nicht auf sprachliche oder mathematische Vorkenntnisse angewiesen ist. Das erleichtert Vergleiche zwischen Altersgruppen, Bildungsniveaus und Kulturen und reduziert zudem potenzielle Einflüsse von Versuchsleitenden, da die Instruktion intuitiv ist und der Ablauf computerbasiert standardisiert werden kann. Die Autoren stellen darüber hinaus Materialien und Stimuli offen zur Verfügung, was Replikationen und Adaptionen erleichtert und die Transparenz erhöht (Liu et al., 2021).

3.3 Methodische Zugänge der Beiträge

Die Beiträge wurden so konzipiert, dass sie zentrale Determinanten unehrlichen Verhaltens aus unterschiedlichen empirischen Perspektiven prüfen und damit die leitende Forschungsfrage dieser Arbeit in einem mehrperspektivischen Design adressieren. Die eingesetzten Messverfahren erlauben es,

unehrliches Verhalten auf individueller Ebene und in verschiedenen Kontexten jeweils separat und im Zusammenspiel mit anderen Determinanten zu analysieren. Hypothesen werden systematisch aus bestehenden Theorien und empirischen Befunden abgeleitet und in Designs umgesetzt, die diese theoretischen Annahmen in beobachtbares Verhalten übersetzen. Damit besteht die Möglichkeit, Inkonsistenzen der bisherigen Forschung zu adressieren, die maßgeblich durch heterogene Messverfahren und deren Einschränkungen entstanden sein könnten. Die Heterogenität der genutzten Methoden gepaart mit den aufgezeigten Nachteilen bisher genutzter Messmethoden kann ein möglicher Grund für die Variation der Befundlage sein. Die Differenzierung des DST in Entscheidungs- und Intensitätsebene erlaubt damit eine deutlich detailliertere Analyse der bislang diskutierten beeinflussenden Faktoren und eröffnet neue Möglichkeiten zur Überprüfung theoretischer Annahmen. Sie stellt das zentrale methodische Novum dieser Dissertation dar und hebt die Arbeit von bisherigen Studien ab, indem sie eine analytische Tiefe schafft, die in klassischen Methoden entweder nicht realisierbar war oder keine Anwendung fand.

Die Beiträge untersuchen anhand spezifischer Fragestellungen unehrliches Verhalten in unterschiedlichen experimentellen Designs. Abhängig vom jeweiligen Messverfahren variieren Stichprobengrößen, Messwiederholungen und Itemzahlen, wodurch sowohl querschnittliche als auch longitudinale Analysen möglich werden. In den Datenauswertungen kommen inferenzstatistische Verfahren zum Einsatz, die der hierarchischen Struktur der Daten Rechnung tragen. Neben gemischten Modellen werden Varianzanalysen und logistische und lineare Regressionsmodelle genutzt, um Haupteffekte, Interaktionen sowie Moderationen zu prüfen. Durch diese statistische Vielfalt entsteht eine robuste Evidenzbasis, die nicht auf ein einzelnes Modell angewiesen ist, sondern Hypothesen über verschiedene analytische Zugänge hinweg prüft.

Die methodische Vielfalt der Beiträge ist nicht nur ein beschreibendes Merkmal, sondern ein gezielter Ansatz zur Stärkung der Aussagekraft. Durch die Kombination verschiedener Messverfahren, Kontexte und Analyseebenen können theoretische Annahmen aus unterschiedlichen Blickwinkeln geprüft werden. So entsteht ein komplementäres Gesamtbild, das die Gefahr methodenspezifischer Verzerrungen verringert und die Generalisierbarkeit der Befunde absichert. Die folgende Übersichtstabelle unterstützt diesen Anspruch, indem sie die zentralen Merkmale der Studien transparent darstellt und Vergleichbarkeit schafft (Tabelle 2).

***Tabelle 2**: Übersicht der Variablen und Methoden in den fünf Beiträgen*

Beitrag	Prädiktoren	Abhängige Variable	Messverfahren	Datensatz (Design)
1	- Geschlecht - Soziale Erwünschtheit - Task- and Ego-Orientation - Honesty-Humility	Auftreten und Ausmaß von unehrlichem Verhalten	- Difference Spotting Task - Koordinative Wurfaufgabe - Isometrische Kraftaufgabe	n = 63 (Within-Design)
2	- Zeit - Geschlecht - Online vs. Präsenz (Between)	Jegliches und bedeutsames unehrliches Verhalten	- Feinmotorische Tracing Aufgabe	*n* = 137 (Between-Design) - Online: *n* = 75 - Präsenz: *n* = 62
3	- Geschlecht - Online vs. Präsenz (Between) - Soziale Erwünschtheit - Task- und Ego-Orientation - Honesty-Humility	Auftreten und Ausmaß von unehrlichem Verhalten	- Difference Spotting Task	*n* = 144 (Between-Design) - Online: *n* = 71 - Präsenz: *n* = 63
4	- Gewinn-/Verlustformulierung (Within) - Online vs. Präsenz (Between) - Geschlecht	Auftreten und Ausmaß von unehrlichem Verhalten	- Adaptierte Version (Framing) des Difference Spotting Task	*n* = 238 (Mixed-Design) - Online: *n* = 125 - Präsenz: *n* = 113
5	- Alleine vs. Beobachter (Within)	Auftreten und Ausmaß von unehrlichem Verhalten	- Adaptierte verkürzte Version des Difference Spotting Task	*n* = 69 (Within-Design)

4 Empirische Beiträge der Dissertation

Der Forschungsstrang rund um unehrliches Verhalten ist durch eine Vielzahl an Messverfahren und konzeptionellen Zugängen geprägt, was zu einer erheblichen Breite in der empirischen Literatur führt. Diese methodische und theoretische Diversität erschwert nicht nur die Vergleichbarkeit von Studien, sondern stellt auch hohe Anforderungen an die Konsistenz und Interpretation von Befunden. Aus diesem Grund fokussieren sich viele empirische Arbeiten und die Beiträge dieser kumulativen Dissertation auf spezifische Fragestellungen und kontextgebundene Determinanten unehrlichen Verhaltens. Studien, die ausschließlich Prävalenzzahlen berichten, ohne dabei erklärende Variablen oder theoretische Modelle zu berücksichtigen, sind in der jüngeren Forschung zunehmend in den Hintergrund getreten. Ihr begrenzter empirischer Informationsgehalt und die fehlende Anschlussfähigkeit an theoretische Diskurse haben dazu geführt, dass sie nur noch selten publiziert werden.

Der theoretische Rahmen dieser Dissertation, der auf handlungstheoretischen, sozialpsychologischen und normativen Perspektiven basiert, wurde in den vorangegangenen Kapiteln ausführlich dargestellt und bildet die konzeptionelle Grundlage für die empirischen Beiträge. Nachfolgende Einordnungen dienen der Verortung der empirischen Beiträge innerhalb der theoretischen Grundannahmen, die der übergeordneten Forschungsfrage dieser Dissertation zugrunde liegen. Die in den vorangegangenen Kapiteln dargestellten Modelle des sozialen Handelns (Weber, 1976), der engen und weiten Version der Rational Choice Theorie (Coleman, 1990; Opp, 1999), sowie die soziologische und sozialpsychologische Erweiterung über den ***homo sociologicus*** (Dahrendorf, 2006) und Konzepten wie Moral Disengagement (Bandura, 1999), Neutralisierungstechniken (Sykes & Matza, 1957) und das Moral-Balance Modell (Nisan & Horenczyk, 1990) bilden den theoretischen Rahmen, in dem die Beiträge konzeptionell anknüpfen. Es handelt sich hierbei um Grundannahmen, und nicht um Modelle, die in den einzelnen Studien getestet wurden. Vielmehr strukturieren sie die theoretische Perspektive und ermöglichen eine systematische Einordnung der empirischen Befunde in eine konsistente Grundlage.

Anschließend folgen die Zusammenfassungen der eigenen Beiträge sowie die Überleitungen auf die jeweils relevanten empirischen Befunde, die verwendeten Messverfahren sowie die spezifischen Modelle und Konzepte, die zur Entwicklung und Prüfung der Hypothesen herangezogen wurden. Zur Beantwortung der beiden Teilforschungsfragen (welche sozialen, kontextuellen Bedingungen beeinflussen unehrliches Verhalten; welche personelle Faktoren prägen unehrliches Verhalten) ordnen sich die fünf empirischen Beiträge wie folgt ein. Beitrag 1 adressiert überwiegend die personelle Teilfrage, Beitrag 2 und Beitrag 5 fokussieren hauptsächlich die soziale Teilfrage, während die Beiträge 3 und 4 beide Perspektiven verbinden. Damit wird die übergeordnete Forschungsfrage in einer integrativen Betrachtung aufgegriffen.

4.1 Beitrag 1 – How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior

Im ersten Beitrag dieser kumulativen Dissertation wird untersucht, ob unehrliches Verhalten über verschiedene Handlungskontexte hinweg innerhalb einer Person stabil bleibt. Damit knüpft die Studie an Annahmen der erweiterten Rational-Choice-Theorie und des ***homo sociologicus*** an (Coleman, 1990; Mazar et al., 2008; Tao & Au, 2014). Darüber hinaus eröffnet der Beitrag Anschlussmöglichkeiten zu Konzepten moralischer Selbstregulation wie Moral-Balance und Self-Licensing (Nisan, 2013; Nisan & Horenczyk, 1990). Innerhalb dieser theoretischen Perspektive wird angenommen, dass sich verschiedene Typen unehrlichen Verhaltens unterscheiden lassen (Kajackaite & Gneezy, 2017). Diese Typologie legt nahe, dass unehrliches Verhalten nicht nur kontextabhängig ist, sondern auch durch stabile individuelle Unterschiede geprägt sein kann. Frühere Studien zeigen Hinweise auf genetische Einflüsse und stabile moralische Standards (Loewen et al., 2013; Shen et al., 2016) sowie empirische Evidenz für konsistente Muster unehrlichen Verhaltens (Thielmann et al., 2025). Die leitende Forschungsfrage für diesen ersten Beitrag lautet daher, ob unehrliches Verhalten innerhalb einer Person über verschiedene Aufgaben hinweg stabil bleibt, und welche Faktoren diese Stabilität beeinflussen.

Aufbauend auf ökonomischen, sozialpsychologischen und soziologischen Perspektiven wird insbesondere die Spezifikation der Anomie-Theorie von Opp (1974) als ergänzendes Raster genutzt. Opp differenziert die Intensität internalisierter Ziele, die Intensität illegitimer Normen sowie den Grad legitimer und illegitimer Mittel und Gelegenheiten als variierende Determinanten normabweichenden Handelns. Dadurch wird die Erklärung von Unehrlichkeit über rein monetäre Kosten-Nutzen-Bilanzen hinaus erweitert, indem individuelle Zielbindungen und wahrgenommene Handlungswege systematisch berücksichtigt werden. Auf Basis dieser Ergänzungen stellt sich die Frage, ob dieses komplexe Zusammenspiel aus Zielen, Normen und verfügbaren Mitteln innerhalb einer Person über verschiedene Aufgaben hinweg stabil bleibt oder ob es an unterschiedliche Anforderungen und Szenarien angepasst wird.

Aus der Kombination dieser theoretischen Annahmen wird intrapersonelle Stabilität in der Ausprägung unehrlichen Verhaltens erwartet. Explorativ werden Geschlechtsunterschiede in unehrlichem Verhalten vorhergesagt, wobei analog zu einem Großteil der bisherigen Befunde angenommen wird, dass unehrliches Verhalten vermehrt bei Männern im Vergleich zu Frauen auftritt (Dreber & Johannesson, 2008; Fischbacher & Föllmi-Heusi, 2013; Grosch & Rau, 2017; Grym & Liljander, 2016; Lohse & Qari, 2021). Außerdem werden Zusammenhänge mit Honesty–Humility (K. Lee & Ashton, 2004), Sozialer Erwünschtheit (Crowne & Marlowe, 1960; Stöber, 1999) und Task- und Ego-Orientierung (Duda & Nicholls, 1992; Rethorst & Wehrmann, 1998) geprüft.

Die Studie wurde in einem Within-Subjects-Design mit insgesamt 63 jungen Erwachsenen durchgeführt, von denen 30 männlich und 33 weiblich waren. Unehrlichkeit wurde im DST sowie in zwei motorischen Aufgaben (koordinative Wurfaufgabe und isometrische Kraftaufgabe) erfasst, in denen die Differenz zwischen selbstberichteter und tatsächlicher Leistung als Maß für Unehrlichkeit diente. Eine unrechtmäßige Erhöhung der eigenen Leistung wurde dabei als unehrliches Verhalten operationalisiert. Die methodische Umsetzung anhand wiederholter Messungen in unterschiedlichen Aufgaben ermöglicht es, die theoretische Annahme von Stabilität oder Variabilität sowohl auf der Entscheidungs- als auch auf der Intensitätsebene zu prüfen.

Für die statistische Analyse wurden gemischte lineare und logistische Modelle genutzt. Ein Stabilitätsindex, der die intrapersonelle Varianz der z-standardisierten Unehrlichkeitswerte über die drei Aufgaben hinweg abbildet, diente zur Analyse der Haupthypothese. Als weitere Prädiktoren wurden Geschlecht, Honesty-Humility, soziale Erwünschtheit sowie Task- und Ego-Orientierung integriert.

Die Ergebnisse zeigen, dass unehrliches Verhalten in allen drei Aufgaben auftritt. In den gemischten Modellen sagte soziale Erwünschtheit einen höheren Umfang unehrlichen Verhaltens vorher, während Task-Orientierung die Wahrscheinlichkeit des Auftretens erhöhte. Honesty-Humility und Ego-Orientierung zeigten keine signifikanten Effekte. Außerdem wurden keine Geschlechtsunterschiede im Umfang oder im Auftreten von unehrlichem Verhalten beobachtet. Der intrapersonelle Stabilitätsindex lag unter dem Schwellenwert, der als Indikator für einen kleinen Effekt definiert ist. Daraus folgt, dass die Ausprägung unehrlichen Verhaltens über alle drei Aufgaben unabhängig von der Höhe stabil bleibt. Auf der Entscheidungsebene traten Muster auf, die den Typologien der Self-Licensing-Theorie entsprechen. Es wurde sowohl durchgehend ehrliches Verhalten (13%), als auch durchgehend unehrliches Verhalten (16%) oder situative Variabilität (71%) gezeigt. Zusammen legen die Befunde nahe, dass individuelle Unterschiede nicht nur situativ bedingt sind, sondern eine persönlichkeitsbezogene Komponente besitzen, die mit Opps Fokus auf stabile Zielintensitäten und wahrgenommene Mittel in Einklang steht.

Die Ergebnisse des ersten Beitrags eröffnen zwei zentrale Ansatzpunkte für die folgenden Studien. Zunächst wird die Bedeutung kontextspezifischer Unterschiede in Kosten-Nutzen-Abwägungen und Normaktivierung deutlich, weshalb soziale Präsenz, Anonymität und Beobachtbarkeit in den Beiträgen 2 bis 5 variiert werden. Um bei der Operationalisierung von Opp zu bleiben, ergibt sich außerdem als weitere Perspektive eine Analyse der Intensität internalisierter Ziele. Hierfür wird ein experimentelles Messwiederholungsdesign (Beitrag 2) genutzt.

4.2 Beitrag 2 – Tracing the lines of deceit. Male cheating behavior increases in online versus face-to-face environments over time

Während Beitrag 1 die Stabilität unehrlichen Verhaltens innerhalb einer Person über verschiedene Aufgaben hinweg untersucht, erweitert Beitrag 2 die Perspektive um eine Betrachtung im zeitlichen Verlauf und unter verschiedenen sozialen Bedingungen. Im Mittelpunkt steht dabei die Frage, ob sich unehrliches Verhalten verändert, wenn es wiederholt gezeigt werden kann, und ob es Unterschiede in den getesteten sozialen Umgebungen gibt. Aus Sicht der erweiterten Rational-Choice-Theorie bedeutet dies, dass sich die subjektive Kosten-Nutzen-Bilanz kontextabhängig verschiebt. In Online-Umgebungen reduziert die höhere Anonymität die wahrgenommenen Kosten, insbesondere in Form geringerer Entdeckungs- und Sanktionswahrscheinlichkeiten sowie potenzieller Reputations- und Selbstbildschäden. Demgegenüber erhöhen Präsenz-Settings durch die stärkere Normaktivierung, die Möglichkeit direkter Beobachtung und die Gefahr sozialer Sanktionen die wahrgenommenen Kosten unehrlichen Verhaltens. Das Modell des ***homo sociologicus*** ergänzt diese Perspektive, indem es die Rolle internalisierter Normen und Rollenanforderungen betont, deren Bindekraft in Präsenzsituationen durch soziale Nähe besonders stark, in anonymen Online-Kontexten hingegen deutlich abgeschwächt ist. Im Sinne der Neutralisierungsthese kann in Gruppensettings der Rechtfertigungsgedanke „die anderen verhalten sich ebenfalls unehrlich“ eine Ablehnung der Verantwortung oder eine Verneinung des Unrechts begünstigen. In anonymeren Online-Umgebungen werden solche Neutralisierungen durch reduzierte Kontrolle und Sanktionen zusätzlich erleichtert.

Die wiederholte Durchführung erlaubt die Analyse zeitlicher Dynamiken wie moralischer Lizenzierung und Kompensation (Moral-Balance-Modell). Damit bietet das Design die Chance, Prozesse moralischer Selbstregulation empirisch zu erfassen, ohne sie experimentell zu induzieren. Beitrag 2 greift damit zentrale theoretische Annahmen sowohl zur moralischen Selbstregulation als auch zur Kontextabhängigkeit von Normen auf und ergänzt die bisherige Betrachtung stabiler individueller Unterschiede um die Frage nach deren Veränderbarkeit bei Wiederholung und verschiedenen sozialen Bedingungen.

Der theoretische Ausgangspunkt ist die Annahme, dass Normen nicht allgemeingültig sind, sondern sich in Abhängigkeit vom sozialen Kontext unterschiedlich entfalten können (Davis et al., 2002; Lieberman & Schroeder, 2020). In anonymen Online-Settings wird eine geringere Normbindung angenommen, da die wahrgenommenen sozialen Sanktionen reduziert sind (Bohnet & Frey, 1999; Varvarigos & Xin, 2020). Diese Annahmen stehen in enger Verbindung zur Theorie der sozialen Distanz und zur Bedeutung sozialer Präsenz, die beide unter anderem betonen, dass physische Nähe und direkte Beobachtung die Einhaltung sozialer Normen fördern (Hoffmann et al., 1996; Waeber, 2021). Vor diesem Hintergrund wird analog zu bisherigen Befunden (Dickinson & McEvoy, 2020; Janke et al., 2021;

Kroher & Wolbring, 2015; Waeber, 2021) angenommen, dass unehrliches Verhalten in Online-Bedingungen häufiger auftritt als in Präsenzsitzungen. Das Geschlecht wird erneut als explorativer Faktor in die inferenzstatistischen Analysen integriert.

Die soziale Lerntheorie ergänzt die Perspektive, indem sie eine schrittweise Normalisierung unehrlichen Verhaltens bei ausbleibenden Sanktionen postuliert (Burgess & Akers, 1966; Lamnek, 2021). Analog zu bestehenden Befunden (Garrett et al., 2016; Welsh et al., 2015) wird angenommen, dass unehrliches Verhalten mit der Zeit zunimmt, da moralische Hemmungen durch wiederholte Gelegenheiten und mangelnde Sanktionen abgeschwächt werden.

Die Studie wurde in einem Between-Subjects-Design mit insgesamt 137 Studierenden durchgeführt, von denen 75 in einer Online- und 62 in einer Präsenzumgebung getestet wurden. Über vier Sitzungen bearbeiteten die Teilnehmenden jeweils fünf feinmotorische Tracing-Durchgänge, bei denen sie ihre Leistung zunächst vorhersagten und nach Durchführung selbst bewerteten. Die Differenz zwischen der selbstberichteten und der durch Experten nachcodierten Fehleranzahl wurde als Maß für unehrliches Verhalten verwendet. Dabei wurde zwischen „all cheating“ (jede Abweichung) und „meaningful cheating“ (Abweichungen, die zu einem Vorteil führten) unterschieden. Methodisch stellt die Studie einen innovativen Zugang dar, da sie als erste Untersuchung unehrliches Verhalten in einer leistungsbasierten Selbstberichtsaufgabe über mehrere Wochen hinweg in zwei sozialen Kontexten erfasst. Die statistische Analyse erfolgte mittels linearer gemischter Modelle, die Geschlecht, soziale Bedingung und Zeit als Messwiederholungsfaktor als Prädiktoren integriert.

Die Ergebnisse zeigen, dass unehrliches Verhalten in beiden Bedingungen auftritt, jedoch in der Online-Bedingung über die Zeit hinweg signifikant zunimmt. Besonders bei männlichen Teilnehmenden zeigte sich ein deutlicher Anstieg von „meaningful cheating“ über die vier Sitzungen hinweg, während bei Frauen keine vergleichbare Entwicklung beobachtet werden konnte. Im Hinblick auf die zentrale Hypothese ergab sich ein signifikanter Unterschied im Ausmaß „meaningful cheating“ zwischen den Bedingungen, wobei Männer in der Online-Bedingung signifikant unehrlicher agierten als in der Präsenzsituation. Für weibliche Teilnehmende zeigte sich hingegen kein signifikanter Unterschied zwischen den Bedingungen.

Die Befunde bestätigen die Annahmen sozialer Distanz und Lernprozesse als Einflussfaktoren. Die beobachteten Unterschiede in der zeitlichen Entwicklung unehrlichen Verhaltens lassen sich im Sinne von Opp (1974) als Hinweise darauf interpretieren, dass die Intensität internalisierter Ziele kontextabhängig variiert. In anonymen Online-Umgebungen scheint die Bindekraft moralischer Zielsysteme abgeschwächt, während soziale Nähe in Präsenzsituationen deren Aktivierung begünstigt.

Für die Dissertation liefert dieser Beitrag eine zentrale Erweiterung der bisherigen Perspektive. Beitrag 2 zeigt, dass unehrliches Verhalten in Abhängigkeit der sozialen Bedingung in unterschiedlicher

Höhe auftreten kann. Die Studie verbindet kontextuelle und zeitliche Aspekte unehrlichen Handelns und demonstriert, dass soziale Rahmenbedingungen und wiederholte Gelegenheiten entscheidende Einflussfaktoren darstellen und soziale Präsenz eine wichtige Bedeutung für die moralische Selbstregulation besitzt. Im Gegensatz zu Beitrag 1 zeigen sich hier kontextspezifische Geschlechtsunterschiede. Diese Befunde verdeutlichen, dass Geschlecht nicht nur als personeller Faktor, sondern auch in Wechselwirkung mit sozialen Kontexten relevant wird.

4.3 Beitrag 3 – Spotting the difference from lab to screen: How social distance and anonymity affect dishonesty

Während Beitrag 2 die Veränderung unehrlichen Verhaltens über die Zeit in unterschiedlichen sozialen Bedingungen untersucht, fokussiert sich Beitrag 3 lediglich auf die Frage, ob sich unehrliches Verhalten in anonymen und beobachteten Umgebungen bei einmaliger Durchführung des DST unterscheidet. Methodisch erweitert und ergänzt dieser Beitrag den vorangegangenen um ein kognitives Messerfahren, welches eine differenzierte Betrachtung von Entscheidungs- und Intensitätsebene ermöglicht.

Die theoretische Fundierung des Beitrags basiert auf Annahmen zur Kontextabhängigkeit von Normen sowie zur Bedeutung sozialer Präsenz und Distanz (Cartwright & Xue, 2020; Cohn et al., 2022; Hoffmann et al., 1996; Lieberman & Schroeder, 2020). Diese und die grundlegenden Modellannahmen werden hier nicht erneut ausgeführt, sondern durch die Trennung von Entscheidungs- und Intensitätsebene unehrlichen Verhaltens ergänzt. Vor diesem Hintergrund wird analog zu bisherigen Befunden (Dickinson & McEvoy, 2020; Janke et al., 2021; Kroher & Wolbring, 2015; Waeber, 2021) und Beitrag 2 angenommen, dass unehrliches Verhalten in Online-Bedingungen häufiger auftritt als in Präsenzsitzungen. Geschlecht wird erneut als explorativer Faktor in die inferenzstatistischen Analysen integriert.

In einem Between-Subjects-Design bearbeiteten 144 Studierende den DST entweder in einer Online- (n = 71) oder einer Präsenzbedingung (n = 63). Die Ergebnisse zeigen, dass unehrliches Verhalten in beiden Bedingungen auftritt. Sich auf der Entscheidungsebene unehrlich zu verhalten ist dabei jedoch in der anonymen Online-Bedingung signifikant höher als im Präsenzsetting. Im digitalen Online Kontext war die Wahrscheinlichkeit von männlichen Personen, unehrliches Verhalten zu zeigen, 14-mal höher als bei weiblichen Personen. Dies deutet darauf hin, dass Männer in anonymen Kontexten besonders anfällig für unehrliches Verhalten sind, während Frauen vergleichbare Werte in den unterschiedlichen Bedingungen zeigten. Auch auf der Intensitätsebene zeigen Männer signifikant höheres unehrliches Verhalten online im Vergleich zu Präsenz Umgebungen.

Diese Befunde bestätigen zentrale theoretische Annahmen der erweiterten Rational-Choice-Theorie, wonach sich die subjektive Kosten-Nutzen-Bilanz kontextabhängig verschiebt. In Online-Umgebungen reduziert die erhöhte Anonymität die wahrgenommenen sozialen und moralischen Kosten, wodurch die Schwelle zur Unehrlichkeit sinkt. Gleichzeitig stützen die Ergebnisse das Modell des ***homo sociologicus***, indem sie zeigen, dass die Bindekraft internalisierter Normen und Rollenanforderungen in Präsenzsituationen durch soziale Nähe und Beobachtbarkeit und durch die Angst von Selbstbildschäden stärker aktiviert wird. Die deutlich höhere Unehrlichkeit von Männern im Online-Kontext lässt sich zudem durch Mechanismen des Moral Disengagement erklären, da die reduzierte soziale Kontrolle kognitive Rechtfertigungen erleichtert und moralische Selbstsanktionen situativ abgeschwächt werden können. Schließlich liefert die Studie auch empirische Evidenz für die Neutralisierungsthese nach Sykes und Matza, da die Online-Bedingung durch ihre Distanz und Anonymität besonders geeignet erscheint, um Rechtfertigungstechniken zu aktivieren und Normverletzungen zu rationalisieren.

Damit liefert Beitrag 3 eine wichtige konzeptionelle Ergänzung. Es konnte gezeigt werden, dass nicht nur wiederholte Durchführung der gleichen Aufgabe, sondern bereits das einmalige Absolvieren des DST in unterschiedlichen sozialen Bedingungen zu systematischen Unterschieden im unehrlichen Verhalten führen kann. Die Trennung von Entscheidungs- und Intensitätsebene stellt dabei eine empirische Weiterentwicklung bisheriger Studienbefunde dar, und ermöglicht eine differenzierte Betrachtung. Besonders im Vergleich zu Beitrag 2 wird deutlich, dass männliche Probanden stärker auf soziale Kontrolle und Beobachtung reagieren. Die Bedeutung von sozialer Präsenz für Prozesse moralischer Selbstregulation wird damit empirisch bestärkt. Des Weiteren replizieren diese Ergebnisse die zentralen Befunde von Beitrag 2 und bestätigen die gefundenen Geschlechtsunterschiede. In den bisherigen Beiträgen konnte gezeigt werden, dass bereits geringe monetäre Anreize ausreichend sind, um unehrliches Verhalten hervorzurufen. Im nächsten Beitrag soll detaillierter untersucht werden, ob die Anreizformulierung in Form von Gewinnen und Verlusten einen weiteren Einfluss auf unehrliches Verhalten ausüben kann.

4.4 Beitrag 4 – Framing effects and social context as determinants of dishonest behavior

Die bisherigen Beiträge verdeutlichen, dass unehrliches Verhalten nicht allein durch stabile Persönlichkeitsfaktoren erklärt werden kann, sondern in hohem Maße kontextabhängig ist. Insbesondere die Variation sozialer Präsenz und Anonymität hat sich als bedeutsam erwiesen, weshalb sich die Frage nach weiteren Einflussgrößen stellt. Aufbauend auf diesen bisherigen Befunden richtet sich der Fokus des vierten Beitrags neben der erneuten kontextspezifischen Analyse ebenfalls auf die unterschiedliche Formulierung von Anreizstrukturen. Während ökonomische und sozialpsychologische Ansätze bislang primär Kosten-Nutzen-Abwägungen oder Normaktivierung betonten, eröffnet die Betrachtung

der „Prospect Theory“ (Kahneman & Tversky, 1979) eine zusätzliche neue Perspektive. Sie postuliert innerhalb der „Loss-Aversion“ (Verlustaversion oder Verlustvermeidung), dass Verluste psychologisch schwerer wiegen als gleich große Gewinne, und Entscheidungen relativ zu einem Referenzpunkt bewertet werden (Kahneman & Tversky, 1979; Kern & Chugh, 2009; Shalvi, 2012; Tversky & Kahneman, 1981). Verschiedene Anreizformulierungen könnten dabei auf der Nutzen-Seite der erweiterten Rational-Choice-Theorie wirken, indem Verlustvermeidung als besonders starker Anreiz wahrgenommen werden kann. Dies reduziert die wahrgenommenen moralischen Kosten und erleichtert kognitive Rechtfertigungen. Die Neutralisierungsthese spielt hier eine untergeordnete Rolle, da Anreizformulierungen nicht primär soziale Rechtfertigungsmuster adressieren, sondern die individuelle Bewertung von Konsequenzen. Theoretisch lässt sich zudem argumentieren, dass Moral Disengagement in Verlustsituationen leichter aktiviert werden könnte, da die Vermeidung eines Verlustes stärker als moralisch legitimierbar erscheint. Dieser Beitrag ergänzt dementsprechend die Vorangegangenen um die theoretische Annahme, dass sich unehrliches Verhalten durch psychologische Nutzenverschiebung beeinflussen lässt.

Die zugrundeliegende Forschungsfrage lautet daher: Wie beeinflussen Gewinn- und Verlustformulierungen der monetären Anreize, sowie die soziale Umgebung unehrliches Verhalten? Diese Fragestellung erlaubt nicht nur die Prüfung theoretischer Annahmen zur Verlustaversion, sondern auch die Analyse, ob situative Faktoren wie Anonymität und soziale Kontrolle die Wirkung solcher Formulierungen verstärken oder abschwächen.

Aus diesen theoretischen Grundlagen folgt, dass eine Verlustformulierung stärkere Motivationsimpulse auslöst als eine Gewinnformulierung und dadurch die Bereitschaft zu unehrlichem Verhalten erhöhen kann (Cameron & Miller, 2009; Schindler & Pfattheicher, 2017). Bisherige Studien sind in ihren Ergebnissen jedoch inkonsistent. Während einige Studien erhöhte Unehrlichkeit in verlustformulierten Aufgaben nachweisen konnten (Garbarino et al., 2019; Grolleau et al., 2016; Huynh, 2020; Steinel et al., 2022) zeigt die Literatur gleichzeitig ein heterogenes Bild mit Nullbefunden (Bogliacino & Montealegre, 2020; Ortiz et al., 2023; Reis et al., 2023) und sogar Hinweisen darauf, dass bei geringen monetären Einsätzen Gewinne gelegentlich stärker wirken als Verluste (Harinck et al., 2007). Diese Spannweite an Ergebnissen legt nahe, dass Verlustaversion nicht als universales Prinzip zu verstehen ist, sondern kontextabhängigen Grenzen unterliegt und vom Aufgabentyp, der Höhe der Anreize sowie der Implementierung des Referenzpunkts beeinflusst wird. Aus der Prospect Theory wurde jedoch die Hypothese abgeleitet, dass Verlustformulierung unehrliches Verhalten erhöht.

Die weitere theoretische Fundierung des Beitrags basiert auf Annahmen zur Kontextabhängigkeit von Normen sowie zur Bedeutung sozialer Präsenz und Distanz. In anonymen Online-Umgebungen, in denen soziale Präsenz und normative Kontrolle reduziert sind, könnten Verluste und Gewinne

unterschiedlich gewichtet werden, da die wahrgenommenen sozialen Kosten geringer sind. In Präsenz Umgebungen hingegen wirken soziale Nähe und potenzielle Beobachtung als normative Kontrollen, welche die Kosten von unehrlichem Verhalten erhöhen und damit den Einfluss der Verlustformulierung abschwächen könnten. Diese Überlegung eröffnet die Möglichkeit einer Interaktion zwischen Gewinn- und Verlustformulierung und sozialer Distanz, die bislang empirisch nicht untersucht wurde.

Insgesamt wurden 238 Personen entweder Online (*n* = 125) oder in einer Präsenzumgebung (*n* = 113) getestet. Die Erhebung folgte einem gemischten Design mit dem Innersubjektfaktor „Framing“ (Gewinn- und Verlustformulierung) und der sozialen Umgebung als Zwischensubjektfaktor. Jede Person bearbeitete den DST und erhielt das Framing in zwei Blöcken zu je 40 Trials. Unter Gewinnformulierung konnte pro „Ja“-Antwort im DST drei Cent gewonnen werden, während eine Verneinung ohne Auszahlung blieb. Unter Verlustformulierung starteten die Teilnehmenden mit einem Guthaben von 120 Cent, bei jeder „Nein“-Antwort wurde das Guthaben um drei Cent reduziert (Verlust), eine „Ja“-Antwort ließ das Guthaben unverändert. Die Referenzpunkte wurden so gesetzt, dass jeder Verlustblock mit demselben Startguthaben begann und keine zuvor erarbeiteten Gewinne gefährdet waren. Um Sequenzeffekte zu kontrollieren, begann die Hälfte der Stichprobe mit der Gewinnformulierung und wechselte anschließend zur Verlustformulierung, während die anderen in umgekehrter Reihenfolge getestet wurden. Die Datenerhebung erfolgte in der Präsenzbedingung in Kleingruppenlaboren mit Sichtschutz und minimaler Beobachtbarkeit und in der Onlinebedingung am Heimcomputer.

Die Ergebnisse des Hauptmodells, in dem lediglich der Innersubjektfaktor „Framing“ über beide Kontexte hinweg analysiert wurde, zeigten keinen signifikanten Unterschied zwischen Gewinn- und Verlustformulierung. Ein erweitertes exploratives Modell mit den Zwischensubjektfaktoren sozialer Kontext und Geschlecht ergab einen signifikanten Haupteffekt des sozialen Kontexts, wonach die Ausprägung unehrlichen Verhaltens online höher war als in Präsenz. Interaktionen zwischen Framing und Kontext sowie zwischen Framing und Geschlecht erreichten keine Signifikanz. Damit wurde die Hypothese zur Verlustvermeidung verworfen, während sich der soziale Kontextunterschied erneut bestätigte. Das Muster spricht dafür, dass in dieser spezifischen Testung mit geringen Einsätzen soziale Kontexte und Anonymität eine größere Rolle für Normabweichungen spielen als Gewinn- und Verlustformulierungen.

Insgesamt zeigt der vierte Beitrag, dass die empirische Evidenz für eine generelle Überlegenheit von Verlustrahmungen im Kontext unehrlichen Verhaltens begrenzt ist, während die soziale Umgebung einen robusten Einfluss entfaltet. Es scheint, dass eine Formulierung von Verlusten die Kosten-Nutzen-Bilanz im Sinne der erweiterten Rational Choice Theorie nicht zugunsten von unehrlichem Verhalten verändert. Trotz dieses Nullbefundes trägt dieser Beitrag dazu bei, die empirische Studienlage zu stärken. Während eine Vielzahl vorheriger Studien ein Zwischensubjekt-Design verwendete, um

Effekte der Verlustaversion zu testen (Cameron & Miller, 2009; Klein et al., 2020; Ortiz et al., 2023; Schindler & Pfattheicher, 2017), wurde in diesem Beitrag ein Innersubjekt-Design genutzt. Auffällig ist, dass in dieser Studie keine Geschlechtsunterschiede zwischen Online- und Präsenzbedingungen auftraten, obwohl sie in den Beiträgen 2 und 3 deutlich waren. Möglicherweise hat die Einführung des Framing-Faktors diese Unterschiede überlagert, indem die Aufmerksamkeit stärker auf die Anreizstruktur gelenkt wurde und damit kontextspezifische Geschlechtseffekte abgeschwächt wurden. Mit nur etwa einem Drittel männlicher Probanden könnte die ungleichmäßige Geschlechtsverteilung in der Onlinebedingung ein weiterer Grund sein.

4.5 Beitrag 5 – (Dis)Honest when (Un)Seen: Observer presence decreases dishonest behavior

Die bisherigen Analysen haben gezeigt, dass soziale Kontexte und damit einhergehende Faktoren wie Anonymität und physische Präsenz einen bedeutsamen Einfluss auf die Entscheidung für oder gegen unehrliches Verhalten ausüben. Während die vorangegangenen Beiträge Unterschiede zwischen Online- und Präsenzumgebungen sowie die Wirkung indirekter Beobachtbarkeit in Form von Anwesenheit Anderer beleuchteten, richtet sich der Fokus des folgenden Beitrags auf eine Vertiefung dieser Fragestellung. Im Zentrum steht die Forschungsfrage, wie sich unehrliches Verhalten verändert, wenn die Beobachtbarkeit nicht nur latent, sondern unmittelbar gegeben ist. Damit wird ein normativer Kontrollmechanismus untersucht, der über bisherige Designs hinausgeht, indem die physische Anwesenheit passiver Beobachter als situativer Faktor eingeführt wird. Die theoretische Anschlussfähigkeit ergibt sich insbesondere zu Modellen wie dem ***homo sociologicus***, dass die Rolle internalisierter Normen und öffentlicher Selbstaufmerksamkeit betont, sowie zu Konzepten wie Moral Disengagement, deren Wirksamkeit unter direkter Beobachtung stark eingeschränkt sein dürfte. Unter Beobachtung steigt die öffentliche Selbstaufmerksamkeit, wodurch internalisierte Normen stärker in den Vordergrund treten und ihre Bindekraft zunimmt. Neutralisierungstechniken sind in Alleinbedingungen leichter umsetzbar, da fehlende soziale Kontrolle Rechtfertigungen erleichtert, während diese Mechanismen unter Beobachtung kaum greifen. Theoretisch ließe sich auch das Moral-Balance-Modell einbeziehen, da wiederholte Gelegenheiten in beiden Bedingungen Lizenzierungs- oder Kompensationseffekte ermöglichen könnten, wenngleich dies nicht explizit untersucht wurde. Aus Sicht der erweiterten Rational-Choice-Theorie erhöht die Beobachterpräsenz die wahrgenommenen Kosten, wodurch die Kosten-Nutzen-Bilanz zugunsten ehrlichen Verhaltens verschoben wird. Vor diesem Hintergrund untersucht der folgende Beitrag, ob und in welchem Ausmaß die physische Präsenz von Beobachtern unehrliches Verhalten reduziert, und welche Konsequenzen sich daraus für die Erklärung von kontextabhängigem unehrlichem Verhalten ergeben.

Vorangegangene Studien zeigen, dass Beobachtbarkeit einen Einfluss auf unehrliches Verhalten haben kann, jedoch ist die Evidenz heterogen. Symbolische Hinweise wie die Darstellung von Augenbildern auf dem Bildschirm führten beispielsweise nicht zu einer Reduktion unehrlichen Verhaltens (Cai et al., 2015), während mit subtilen Beobachtungshinweisen eine Verringerung von Unehrlichkeit nachgewiesen werden konnte (Oda et al., 2015; Pfattheicher et al., 2019). Diese Effekte werden theoretisch mit erhöhter öffentlicher Selbstaufmerksamkeit und reputationsbezogenen Kosten erklärt. Allerdings bleibt unklar, ob solche indirekten Beobachtungsformen dieselbe normative Wirkung entfalten wie die tatsächliche physische Anwesenheit von direkten Beobachtern. Empirische Evidenz hierzu ist bislang rar. Eine Studie von Köbis et al. (2019) zeigte, dass die bloße Präsenz einer weiteren Person ohne Sanktionsmöglichkeit unehrliches Verhalten reduzieren kann. Aufbauend auf diesen Befunden wurden die Hypothesen formuliert, dass direkte Beobachtung durch anwesende Personen die Wahrscheinlichkeit und das Ausmaß unehrlichen Verhaltens verringert.

Zur Überprüfung dieser Annahme wurde eine modifizierte Version des DST eingesetzt. Insgesamt nahmen 69 Personen teil, die jeweils 20 Trials in einer Alleine und einer Beobachter Bedingungen absolvierten. Analog zu den bisherigen Beiträgen mit dem DST war die Hälfte der Trials unlösbar und diente bei einer „Ja“-Antwort als Indikator für unehrliches Verhalten. In der Allein-Bedingung bearbeiteten alle Teilnehmenden die gleichen Items in randomisierter Reihenfolge. In der Beobachter-Bedingung wurden unterschiedliche Items verwendet, während die Versuchsperson vor zwei weiteren Teilnehmenden und dem Versuchsleiter saß und die Aufgabe unter voller Sichtbarkeit ausführte. Als Anreiz erhielten die Teilnehmenden in beiden Bedingungen für jede „Ja“-Antwort 12 Cent. Methodisch stellt die Studie innerhalb der Dissertation damit eine Neuerung dar. Es wird erstmals ein Innersubjekt-Design nutzt, in dem individuelle Unterschiede kontrolliert und direkte Verhaltensänderungen innerhalb derselben Person erfasst werden. Diese Vorgehensweise erlaubt eine präzisere Analyse der Wirkung sozialer Präsenz, indem sie interindividuelle Varianz ausschließt und die normative Bindekraft unter Beobachtung isoliert. Die Variation zwischen Allein- und Beobachtungsbedingung eröffnet damit eine Perspektive, die nicht nur theoretische Annahmen zur Aktivierung reputationsbezogener Kosten und moralischer Normen prüft, sondern auch praktische Implikationen für die Gestaltung sozialer Kontrollmechanismen liefert.

Die Analysen bestätigen die formulierten Hypothesen. Ein McNemar-Test zeigte signifikante Unterschiede auf der Entscheidungsebene. In der Alleine-Bedingung verhielten sich 64% der Teilnehmenden unehrlich, während es in der Beobachter-Bedingung nur 38% waren. Auch auf der Intensitätsebene spiegelt sich dieser Effekt wider. Das Ausmaß von unehrlichem Verhalten war alleine signifikant höher als unter direkter Beobachtung.

Die Ergebnisse verdeutlichen, dass reale soziale Präsenz eine starke normative Wirkung entfaltet und sowohl reputationsbezogene Kosten als auch öffentliche Selbstaufmerksamkeit aktiviert. Es ist anzunehmen, dass unter direkter Beobachtung die Wirksamkeit von Rechtfertigungsmechanismen wie Moral Disengagement verringert wird. Diese Kombination führt ebenfalls dazu, dass Entscheidungen auf individueller Ebene durch eine erhöhte Wahrnehmung der antizipierten Kosten beeinflusst werden. Damit liefert diese Studie und die vorangegangenen Beiträge eine robuste Evidenz für die Annahme, dass physische Beobachtung und Anwesenheit anderer Personen wirksame Mittel zur Reduktion unehrlichen Verhaltens darstellen.

5 Diskussion

Die in den Einzelbeiträgen aufgearbeiteten Forschungsstände verdeutlichen, dass sich unehrliches Verhalten in vielen Ausprägungen und Erscheinungsformen zeigen kann. Gleichzeitig erschwert die Heterogenität der genutzten Messverfahren, Aufgabencharakteristika und situativen Rahmenbedingungen eine konsistente Zusammenführung der Befunde (Gerlach et al., 2019; Rosenbaum et al., 2014). Diese Arbeit verfolgt das Ziel innerhalb von fünf empirischen Beiträgen, verschiedene Facetten von unehrlichem Verhalten zu identifizieren und soziale, kontextuelle sowie personelle Determinanten über eine konsistente Methodik zu bestimmen. Ein zentraler Schwerpunkt und eine methodische Neuerung liegt dabei in der konzeptionellen Trennung und Analyse der Entscheidungs- und Intensitätsebene. Dies wurde unter anderem durch den DST (Liu et al., 2021) und eine feinmotorische Tracing Aufgabe erreicht. Dieser Ansatz, der eine personen- und itemzentrierte Messung erlaubt, schafft eine konsistente Vergleichsbasis über verschiedene Stichproben, soziale Kontexte und gewisse Zeiträume, die in der bisherigen Forschung nur isoliert, aber nicht in Kombination betrachtet wurden. Ziel dieser Diskussion ist es, die zentralen Befunde über die Einzelbeiträge hinweg zusammenzuführen, in den theoretischen Rahmen einzuordnen und deren Bedeutung für bestehende Modelle und die zukünftige Forschung zu diskutieren.

Die Ergebnisse der Studien weisen darauf hin, dass das Ausmaß von unehrlichem Verhalten über verschiedene Aufgaben auf intrapersoneller Ebene stabil bleibt. Auf der Entscheidungsebene ließen sich wiederholt die Typen der Self-Licensing Theorie bestätigen. Auf interpersoneller Ebene nimmt Unehrlichkeit besonders bei Männern in anonymen Onlinekontexten über die Zeit zu. Interindividuell wirkt sowohl das Geschlecht als auch der soziale Kontext als bedeutende Determinante. Männer scheinen in Bezug auf Normbindung intensiver auf Anonymität und Beobachtbarkeit zu reagieren als Frauen. Intrapsychische Anreizformulierungen im Sinne der Verlustaversion zeigen dabei jedoch keine bedeutende Varianzaufklärung.

Im ersten Beitrag wurde die intrapersonale Stabilität unehrlichen Verhaltens untersucht. Die Befunde bestätigten das Moral Balance Modell von Nisan, wonach Personen in ihrem moralischen Verhalten eine Art inneres Gleichgewicht anstreben (Nisan, 2013). Ergänzend ließen sich die drei Typen der Self-Licensing-Theorie nachweisen, die unterschiedliche Formen moralischer Selbstrechtfertigung beschreiben (Kajackaite & Gneezy, 2017). Damit konnte in diesem Beitrag empirisch bestätigt werden, dass moralisches Verhalten nicht rein situativ, sondern auch innerhalb von Personen über Aufgaben hinweg konsistent ist (Thielmann et al., 2025). Der in Beitrag 1 und 3 nicht signifikante Einfluss des Persönlichkeitsfaktors Honesty-Humility, der in der Literatur häufig als eine der zentralen Determinanten moralischen Verhaltens bezeichnet wird (Klein et al., 2020; Pfattheicher et al., 2019;

Reinhardt & Reinhard, 2023), kann möglicherweise auf methodische Unterschiede zurückgeführt werden. Diese bestehen vor allem in den eingesetzten Messverfahren. So nutzten O'Connor et al. (2021) eine Online-Version des Matrix-Tasks, die anfällig für unbeabsichtigte Fehler ist. Arbeiten von Klein et al. (2020) sowie Thielmann et al. (2023) verwendeten das Münzwurf-Verfahren, bei dem Daten lediglich auf aggregierter Ebene erhoben werden. Analog dazu griffen Pfattheicher et al. (2019) und Kleinlogel et al. (2017) auf das Würfel-Verfahren zurück, während Hilbig und Zettler (2015) ebenfalls Designs mit einmaligen Messungen einsetzten, die keine direkte Beobachtbarkeit des individuellen Verhaltens ermöglichen. Im Gegensatz dazu erlaubt die Messung mittels DST eine Analyse auf Personen- und Itemebene. Diese höhere Präzision und die Möglichkeit, intraindividuelle Muster zu erfassen, könnten zu den beobachteten Unterschieden in den Befunden geführt haben.

Ein weiterer Grund könnte die eingeschränkte Varianz durch selbstselektierte Probandengruppen oder die Operationalisierung von unehrlichem Verhalten in der eigenen oder den anderen Studien (Hilbig & Zettler, 2015; Kleinlogel et al., 2017; O'Connor et al., 2021; Thielmann et al., 2023) sein. So bestand die Stichprobe überwiegend aus Sportstudierenden, bei denen eine relativ homogene Ausprägung in Bezug auf Alter, Bildung und sozialer Normorientierung anzunehmen ist. Dies kann die Varianz von Persönlichkeitsmerkmalen wie Honesty-Humility oder moralischen Standards reduzieren und damit Stärke und Auftreten von Zusammenhängen abschwächen. Zusammen mit den beschriebenen methodischen Unterschieden und Operationalisierungen von unehrlichem Verhalten, wird die Vergleichbarkeit eingeschränkt.

Geschlechtsunterschiede konnten beitragsübergreifend nicht bestätigt werden, was zum einen im Gegensatz zu früheren Arbeiten (Grosch & Rau, 2017; Grym & Liljander, 2016; Lohse & Qari, 2021) steht, aber zum anderen in Übereinstimmung mit anderen Studien ist (Aoki et al., 2010; Ezquerra et al., 2018; Pascual-Ezama et al., 2015). Diese Befundlage verdeutlicht, dass Geschlechtsunterschiede im unehrlichen Verhalten nicht als universell oder stabil anzusehen sind, sondern vielmehr von kontextuellen Faktoren wie der sozialen Umgebung (Waeber, 2021), der Art und Instruktion der Aufgabe (Chowdhury et al., 2021), der Höhe des finanziellen Outcomes (Muñoz García et al., 2021) oder der wahrgenommenen sozialen Bedeutung beeinflusst werden (Kennedy et al., 2017; Lohse & Qari, 2021). Es ist denkbar, dass Geschlecht als Moderator wirkt, dessen Einfluss erst in spezifischen sozialen Konstellationen oder unter bestimmten motivationalen Bedingungen sichtbar wird. Doch die Frage, weshalb Geschlechtsunterschiede in unehrlichem Verhalten auftreten können ist nicht gänzlich zu beantworten. Die bisherige Forschung deutet darauf hin, dass Männer im Durchschnitt stärker kompetitiv orientiert sind und weniger reputationsbezogene Kosten wahrnehmen, während Frauen häufiger prosoziale Werte internalisieren und höhere emotionale Kosten bei Normverletzungen erleben (Cohen et al., 2011; Eagly & Wood, 2012; Grosch & Rau, 2017). Außerdem konnte gezeigt werden, dass Männer

Anonymität strategischer nutzen, um Vorteile zu erzielen, während Frauen auch in anonymen Kontexten relativ stabile Ehrlichkeitsnormen beibehalten (Waeber, 2021). Diese Unterschiede könnten durch soziale Rollenerwartungen und Risikoaversion verstärkt werden (Croson & Gneezy, 2009).

Die Beiträge zwei bis fünf beschäftigten sich mit dem Einfluss sozialer Kontexte, Anonymität und Beobachtbarkeit auf unehrliches Verhalten. Dabei konnte gezeigt werden, dass in anonymen Onlineumgebungen signifikant mehr unehrliches Verhalten auftritt als in Präsenzbedingungen. Die Befunde dieser Beiträge stützen damit die Theorien der sozialen Distanz und Präsenz (Akerlof, 1997; Dana et al., 2007; Hoffmann et al., 1996; Thielmann & Hilbig, 2019; Varvarigos & Xin, 2020). In Einklang mit früheren Befunden (Dickinson & McEvoy, 2020; Kroher & Wolbring, 2015) legen die Ergebnisse ebenfalls nahe, dass soziale Kontrolle und wahrgenommene Beobachtbarkeit zentrale Inhibitoren für unehrliches Verhalten darstellen. Beitrag fünf führte diese Befunde fort, indem er Beobachtbarkeit systematisch und innerhalb der selben Versuchspersonen variierte. Die Ergebnisse bestätigten die zuvor gefundenen Effekte und erweiterten sie um den Beleg, die physische Anwesenheit von Beobachtenden unehrliches Verhalten reduziert. Dies steht im Einklang mit dem Zwei-Kanal-Modell unehrlichen Verhaltens, wonach Beobachtung die kognitiven Kosten unehrlichen Verhaltens erhöht und dadurch die Wahrscheinlichkeit unehrlichen Verhaltens verringert (Brocas & Carrillo, 2019). Dies steht im Einklang mit vorangegangenen empirischen Befunden (Köbis et al., 2019; Oda et al., 2015; Pfattheicher et al., 2019) und deutet in Kombination mit den drei ersten Beiträgen auf generalisierbare Mechanismen sozialer Kontrolle hin, und dass Rechtfertigungsmechanismen stark kontextabhängig sind.

Wie bereits in früheren Studien zeigte sich auch in den Beiträgen 2 und 3, dass Männer in anonymen Online-Umgebungen häufiger unehrlich handeln als Frauen (Waeber, 2021). Diese Ergebnisse ergänzen die auf das Geschlecht als beeinflussende Determinante bezogenen Nulleffekte des ersten Beitrags um eine kontextspezifische Komponente. Die fehlenden Geschlechtsunterschiede in Beitrag 4 könnten darauf zurückzuführen sein, dass die Aufmerksamkeit der Teilnehmenden durch die Anreizformulierung stärker auf die ökonomische Bewertung der Handlung gelenkt wurde und damit die soziale Bedeutung der Handlung in den Hintergrund trat. Dies unterstreicht die Notwendigkeit, Geschlecht nicht als isolierte Determinante zu betrachten, sondern in Wechselwirkung mit situativen Faktoren wie soziale Kontrolle und Beobachtbarkeit zu analysieren.

Ergänzend zu diesen interpersonellen Determinanten wurde der zeitliche Faktor von unehrlichem Verhalten in Beitrag 2 betrachtet. Konform zu den formulierten Hypothesen und den dargestellten Theorien des sozialen Lernens (Burgess & Akers, 1966; Lamnek, 2021), sowie bisherigen empirischen Untersuchungen (Garrett et al., 2016; Welsh et al., 2015) konnte hier gezeigt werden, dass sich unehrliches Verhalten über die Zeit hin steigern kann, wenn keine Sanktionen befürchtet oder erwartet werden. Ein weiterer Anschluss ergibt sich an die Befunde von Beitrag 1. Die personelle Stabilität

von unehrlichem Verhalten konnte auf der Intensitätsebene erneut gezeigt werden, wobei geschlechtsspezifische Unterschiede in den sozialen Kontexten die Befundlage detailliert erweitern.

Als weitere methodische Neuerung und Ergänzung untersuchte Beitrag 4 zusätzlich, ob unterschiedliche Anreizformulierungen im Sinne von Gewinnen und Verlusten unehrliches Verhalten beeinflussen können. Die auf Basis der Prospect Theory formulierte Hypothese zur Verlustaversion (Kahneman & Tversky, 1979) konnte in diesem Beitrag nicht bestätigt werden. Dies steht im Widerspruch zu Studien, die eine erhöhte Unehrlichkeit unter Verlustbedingungen dokumentieren (Grolleau et al., 2016; Schindler & Pfattheicher, 2017), aber in Übereinstimmung mit Arbeiten, die ebenfalls Nullbefunde berichten (Charness et al., 2019; Ortiz et al., 2023; Wyszynski & Bauer, 2023). Gründe hierfür könnten die geringen monetären Einsätze sein, da Individuen gelernt haben mit kleinen Verlusten umzugehen und diese als weniger bedrohlich wahrzunehmen (Gal & Rucker, 2018; Harinck et al., 2007). Außerdem ist es möglich, dass keine Adaptation des Referenzpunktes stattfand, weshalb der Verlust nicht als tatsächlicher Verlust wahrgenommen wurde (Higgins & Liberman, 2018). Die Ergebnisse zeigen, dass Verlustvermeidung nicht als universeller Mechanismus für unehrliches Verhalten gelten kann, sondern differenziert betrachtet werden muss.

Insgesamt zeigen die Ergebnisse, dass persönliche Dispositionen und soziale Kontexte nicht isoliert voneinander wirken. Stattdessen bilden sie ein komplexes situativ variables Gefüge, in dem sich einzelne Faktoren je nach sozialer Umgebung und Zeitverlauf gegenseitig verstärken, abschwächen oder anderweitig interagieren können. Dadurch wird deutlich, weshalb die im Methodenteil begründete Standardisierung der Messung und die Trennung von Entscheidung- und Intensitätsebene notwendig ist, um belastbare Generalisierungen zu ermöglichen. Die integrative Betrachtung zeigt, dass unehrliches Verhalten nicht allein durch ökonomische Kosten-Nutzen-Kalküle erklärbar ist. Vielmehr greifen Mechanismen der moralischen Selbstregulation (Moral Balance, Self-Licensing), der zentralen Annahme der Rational-Choice-Erweiterungen, und kontextabhängiger Normaktivierung (***homo sociologicus***) ineinander.

6 Limitationen

Die in dieser Arbeit eingesetzten Verfahren wie der DST und die feinmotorische Tracing-Aufgabe bilden stark strukturierte und dualistische Ja-Nein-Entscheidungssituationen ab, die komplexe, mehrdimensionale Normkonflikte realer Situationen nur eingeschränkt abbilden. Dies schadet der externen Validität, da moralisch komplexe Alltagssituationen nicht vollständig repräsentiert werden. Hinzu kommt, dass die monetären Anreize bewusst niedrig gehalten wurden, um die methodische Vergleichbarkeit zu erhöhen, was jedoch die Übertragbarkeit auf Kontexte mit hohen materiellen oder sozialen Einsätzen beschränkt. Kombiniert mit dem Ausbleiben von Sanktionen bei unehrlichem Verhalten in den experimentellen Kontexten, wurde eine Umgebung geschaffen, welche die Realität nur bedingt darstellt. In Alltagssituationen muss bei abweichendem Verhalten in der Regel mit einer gewissen Form der Sanktionierung gerechnet werden. Die Untersuchung zur Beobachterpräsenz nutzte passive Beobachtende ohne Sanktionsmacht, sodass unbeantwortet bleibt, wie stark Rollen und Überwachungsintensität die Effekte modulieren. Hierdurch wird ebenfalls die externe Validität eingeschränkt.

Hinzu kommt, dass die Stichproben überwiegend aus Studierenden, insbesondere aus Sport- und Psychologiefächern bestehen. Dadurch ist die Übertragbarkeit der Ergebnisse auf andere Altersgruppen, Bildungsniveaus und berufliche Kontexte eingeschränkt. Studierende sind meist jünger und unterscheiden sich in bestimmten Merkmalen von einer breiteren Bevölkerung. Dies kann unehrliches Verhalten beeinflussen. So wurde bei Studierenden vermehrt unehrliches Verhalten festgestellt als bei anderen Gruppen (Abeler et al., 2014; Fosgaard, 2020). Sozial eingebettete Faktoren wie bestehende Freundschaften in Präsenzgruppen und individuell unterschiedliche Reputationssorgen könnten das Verhalten zusätzlich beeinflusst haben. Auch wenn der DST durch seine Instruktion ehrliche Fehler minimiert, können Fehleinschätzungen nicht vollständig ausgeschlossen werden.

In Onlineumgebungen fehlte eine strikte Kontrolle der Umgebungsfaktoren, was potenzielle Störvariablen wie Ablenkungen oder Tageszeiteffekte ermöglicht (Gunia et al., 2014; Kouchaki & Smith, 2014). Manipulationschecks zur wahrgenommenen Anonymität oder Beobachtbarkeit wurden bewusst vermieden, wodurch subjektive Wirkmechanismen nicht validiert werden können. Zudem wurden einige Befunde mit sozialer Distanz und Präsenz erklärt, während andere potenziell relevante Mechanismen wie Leistungsmotivation, Risikoneigung oder Persönlichkeitsvariablen nicht simultan erfasst wurden, was Alternativerklärungen zulässt. Die zeitliche Reichweite der Längsschnittanteile beschränkt sich auf wenige Wochen, sodass Aussagen zur Langzeitstabilität oder zur nachhaltigen Norminternalisierung begrenzt sind.

7 Offene Forschungsfragen

Basierend auf den Limitationen und weiteren empirischen Überlegungen ergeben sich zentrale Forschungsfragen. Zunächst wäre es spannend zu untersuchen, wie sich Entscheidungs- und Intensitätsebene unter hohen materiellen und sozialen Einsätzen verändern. Eine mögliche methodische Umsetzung bietet auch hier der DST. Durch die Item- und personenbasierte Analyse von unehrlichem Verhalten können verschieden hohe monetäre Anreize in einem Design mit Messwiederholung überprüft werden.

Ebenfalls denkbar ist die gänzliche Eliminierung von finanziellen Anreizen und stattdessen das Spielen um Punkte und eine Rangliste als Vergleichsmaßstab einzuführen. Diese Rangliste könnte den Teilnehmenden während oder vor der Aufgabe gezeigt werden und fiktive Bestwerte enthalten, die nicht realistisch erreichbar sind. Solche extrem hohen Werte (bspw. nahe dem theoretischen Maximum des DST von 80 Punkten) könnten den Eindruck erwecken, dass andere Personen außergewöhnlich erfolgreich waren. Dies kann den sozialen Druck erhöhen, nicht als weniger kompetent wahrgenommen zu werden, und dadurch unehrliches Verhalten begünstigen. Die Motivation entsteht hier aus dem Wunsch, das eigene Selbstbild zu schützen und nicht hinter den vermeintlichen Bestleistungen anderer Probanden zurückzubleiben. Umgekehrt könnte eine Rangliste mit vergleichsweise niedrigen Werten (bspw. 40 Punkte oder weniger), den gegenteiligen Effekt auslösen. Probanden könnten sich durch den Wunsch nach Überlegenheit verleiten lassen, ihre eigene Leistung unrechtmäßig zu steigern, indem sie sich unehrlich verhalten. In beide Szenarien kann untersucht werden, ob soziale Vergleichsprozesse als eigenständige Anreizstruktur wirken können, die unehrliches Verhalten provozieren.

Aufbauend auf der zweigeteilten Struktur des DST ließe sich ebenfalls die von Heinrich Popitz (1968) postulierte Theorie zur Präventivwirkung des Nichtwissens überprüfen. Sie besagt, dass die Unkenntnis über das tatsächliche Ausmaß von Normverstößen eine stabilisierende Funktion für das soziale Normensystem hat, weil eine vollständige Aufdeckung und Sanktionierung aller Abweichungen das System überfordern und letztlich destabilisieren würde (Diekmann et al., 2011; Popitz, 1968, 2016). Im DST könnte diese Präventivwirkung des Nichtwissens getestet werden, indem Probanden vor den ersten 40 Durchgängen keine Information über die Häufigkeit unehrlichen Verhaltens anderer erhalten, in der zweiten Hälfte jedoch explizit darüber informiert werden, wie oft andere Personen unehrlich gehandelt haben. Dadurch ließe sich der Einfluss von Transparenz und Nichtwissen auf die individuelle Unehrlichkeit messen. Darüber hinaus könnte untersucht werden, ob ein Hinweis an die Teilnehmenden, dass eine unehrliche Antwort im DST erkannt, jedoch nicht sanktioniert wurde, zu einer Erosion oder zum Ausbleiben weiterer Unehrlichkeit führt.

Ebenso ist zu prüfen, ob sich die Effekte in heterogeneren Stichproben und unterschiedlichen Regionen replizieren lassen, und inwiefern kulturell spezifische Normen die Wirkung sozialer Präsenz oder Anonymität moderieren. Da der DST nicht auf mathematischen oder sprachlichen Kompetenzen beruht, lässt er sich beispielsweise problemlos mit Kindern und älteren Personen durchführen. Durch die Anwendung einer validierten Miniversion können eventuell bestehende Konzentrationsdefizite in diesen Altersgruppen egalisiert werden. Die widersprüchlichen Befunde, die teils höhere Unehrlichkeit bei Jüngeren, teils bei Älteren oder gar keine Altersunterschiede zeigen (Abeler et al., 2014; Bucciol & Piovesan, 2011; Friesen & Gangadharan, 2012, 2013), könnten durch eine differenzierte Analyse auf Entscheidungs- und Intensitätsebene weiter aufgeklärt werden.

Zukünftige Studien sollten zudem die subjektive Wahrnehmung von Anonymität und Beobachtbarkeit durch Manipulationschecks erfassen und untersuchen, wie Faktoren wie Zeitdruck, Stress oder Gruppenkomposition diese Effekte beeinflussen. An Beitrag 5 lässt sich dabei gezielt anknüpfen, indem die Zusammensetzung der Gruppen nach Geschlecht variiert wird. Es erscheint plausibel, dass sich Teilnehmende in geschlechtshomogenen Gruppen anders verhalten als in gemischtgeschlechtlichen Konstellationen, insbesondere, wenn sie unter Beobachtung durch Personen des anderen Geschlechts stehen.

Eine sinnvolle Erweiterung von Beitrag 5 bestünde darin, die Rolle und Intensität von Beobachtung sowie die Art der Beobachtenden systematisch zu variieren, um die zugrundeliegenden Mechanismen zwischen reputationsbezogenen und sanktionsbezogenen Effekten differenzierter zu erfassen. Im DST lassen sich verschiedene Beobachtungsszenarien umsetzen. Eine Möglichkeit besteht darin, dass Teilnehmende von Personen ohne Sanktionsmacht still beobachtet werden. Eine weitere Möglichkeit ist die (zusätzliche) Beobachtung durch eine Autoritätsperson, die zuvor angekündigte Sanktionen bei unehrlichem Verhalten durchsetzt. Als Vergleich kann eine Bedingung, in der keine Beobachtung stattfindet, herangezogen werden. Auf diese Weise könnte untersucht werden, ob unehrliches Verhalten primär durch die Sorge um das eigene Ansehen oder durch die Erwartung negativer Konsequenzen beeinflusst wird. Als Sanktion könnte eine Reduktion des bisher erzielten Gewinns eingeführt werden, die entweder angewendet oder lediglich angedroht werden kann. Beide Implementationsideen setzen jedoch voraus, dass die Probanden über die unlösbaren Bildpaare im DST informiert werden.

7 Fazit

Die vorliegende Arbeit nutzt verschiedene theoretische Ansätze aus der Soziologie, der Ökonomie und der Sozialpsychologie, um mögliche soziale, kontextuelle und personelle Determinanten von unehrlichem Verhalten zu identifizieren. Obwohl einzelne theoretische Modelle verschiedene Einflussfaktoren nicht spezifizieren, konnten auf Basis ergänzender Überlegungen und der bisherigen Empirie die folgenden Aspekte herausgearbeitet werden.

Die Ergebnisse dieser Dissertation beantworten die leitende Forschungsfrage, durch welche sozialen, kontextuellen und personellen Determinanten unehrliches Verhalten beeinflusst wird, mit einer differenzierten Perspektive. Unter den sozialen, kontextuellen Determinanten erwiesen sich Anonymität, soziale Distanz und Beobachtbarkeit als bedeutsame Einflussfaktoren. Anonymität und Onlineumgebungen erhöhen die Wahrscheinlichkeit und das Ausmaß unehrlichen Verhaltens deutlich, während physische Präsenz und direkte Beobachtung es signifikant reduzieren. Wiederholte Gelegenheiten verstärken Unehrlichkeit zusätzlich, was auf soziale Lernprozesse und moralische Lizenzierung hinweist. Das Geschlecht zeigte keinen universellen Effekt, sondern wirkte kontextspezifisch. Männer zeigten sowohl auf der Entscheidungs- als auch auf der Intensitätsebene höheres unehrliches Verhalten in Onlineumgebungen, während diese Effekte in Präsenzbedingungen verschwanden.

Auf personeller Ebene belegen die Befunde, dass sich eine moderate intrapersonelle Stabilität unehrlichen Verhaltens über verschiedene Aufgaben hinweg zeigt, was für Prozesse moralischer Selbstregulation spricht. Persönlichkeitsmerkmale wie Honesty-Humility, die in der Literatur als zentrale Prädiktoren gelten, zeigten unter den hier untersuchten Bedingungen keinen signifikanten Effekt. Ebenso konnte die Hypothese zur Verlustaversion nicht bestätigt werden. Gewinn- oder Verlustformulierungen beeinflussten unehrliches Verhalten nicht, obwohl die Prospect Theory eine erhöhte Emotionalität bei Verlusten postuliert. Dies unterstreicht die Bedeutung kontextueller und sozialer Faktoren gegenüber stabilen Persönlichkeitsmerkmalen und spricht für integrative Modelle, die soziale Einbettung, situative Bedingungen und mentale Kontrollmechanismen gemeinsam berücksichtigen.

Unehrlichkeit demnach nicht nur ein unidimensionales Konstrukt auf Basis einer Kosten-Nutzen-Abwägung. Vielmehr entsteht sie im Zusammenspiel von normativen Erwartungen und situativen Bedingungen, die in sozialen Kontexten unterschiedlich aktiviert werden.

Literaturverzeichnis

Abeler, J., Becker, A. & Falk, A. (2014). Representative evidence on lying costs. *Journal of Public Economics*, *113*, 96–104. https://doi.org/10.1016/j.jpubeco.2014.01.005

Abeler, J., Nosenzo, D. & Raymond, C. (2019). Preferences for Truth-Telling. *Econometrica*, *87*(4), 1115–1153. https://doi.org/10.3982/ecta14673

Abels, H. (2019). *Der Blick auf die Gesellschaft*. *Einführung in die Soziologie: Bd. 01*. Springer. https://doi.org/10.1007/978-3-658-22472-1

Akerlof, G. A. (1997). Social Distance and Social Decisions. *Econometrica*, *65*(5), 1005. https://doi.org/10.2307/2171877

Aoki, K., Akai, K. & Onoshiro, K. (2010). Deception and confession: Experimental evidence from a deception game in Japan. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1677773

Aquino, K. & Reed, A. (2002). The self-importance of moral identity. *Journal of Personality and Social Psychology*, *83*(6), 1423–1440. https://doi.org/10.1037//0022-3514.83.6.1423

Argo, J. J. & Shiv, B. (2012). Are white lies as innocuous as we think? *Journal of Consumer Research*, *38*(6), 1093–1102. https://doi.org/10.1086/661640

Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review*, *3*(3), 193–209. https://doi.org/10.1207/s15327957pspr0303_3

Bandura, A. (2002). Selective moral disengagement in the exercise of moral agency. *Journal of Moral Education*, *31*(2), 101–119. https://doi.org/10.1080/0305724022014322

Bandura, A. (2016). *Moral Disengagement: How People Do Harm and Live with Themselves*. Worth Publishers.

Bandura, A., Barbaranelli, C., Caprara, G. V. & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology*, *71*(2), 364–374. https://doi.org/10.1037/0022-3514.71.2.364

Becker, G. S. (1976). *The economic approach to human behavior*. Univ. of Chicago Press.

Beller, J. M. & Stoll, S. K. (1996). Fairplay: The little white lie. *Strategies*, *9*(7), 23–25. https://doi.org/10.1080/08924562.1996.10592121

Bird, E. J. & Wagner, G. G. (1997). Sport as a common property resource. *Journal of Conflict Resolution*, *41*(6), 749–766. https://doi.org/10.1177/0022002797041006002

Bird, S. R., Goebel, C., Burke, L. M. & Greaves, R. F. (2016). Doping in sport and exercise: Anabolic, ergogenic, health and clinical issues. *Annals of Clinical Biochemistry*, *53*(Pt 2), 196–221. https://doi.org/10.1177/0004563215609952

Biziou-van-Pol, L., Haenen, J., Novaro, A., Occhipinti Liberman, A. & Capraro, V. (2015). Does telling white lies signal pro-social preferences? *Judgment and Decision Making*, *10*(6), 538–548. https://doi.org/10.1017/S1930297500006987

Bogliacino, F. & Montealegre, F. (2020). Do negative economic shocks affect cognitive function, adherence to social norms and loss aversion? *Journal of the Economic Science Association*, *6*(1), 57–67. https://doi.org/10.1007/s40881-020-00091-4

Bohnet, I. & Frey, B. S. (1999). Social distance and other-regarding behavior in dictator games: Comment. *American Economic Review*, *89*(1), 335–339. https://doi.org/10.1257/aer.89.1.335

Bok, S. (2011). *Lying: Moral Choice in Public and Private Life*. Knopf Doubleday Publishing Group.

Brocas, I. & Carrillo, J. D. (2019). A neuroeconomic theory of (dis) honesty. *Journal of Economic Psychology*, *71*, 4–12. https://doi.org/10.1016/j.joep.2018.09.001

Bucciol, A. & Piovesan, M. (2011). Luck or cheating? A field experiment on honesty with children. *Journal of Economic Psychology*, *32*(1), 73–78. https://doi.org/10.1016/j.joep.2010.12.001

Burgess, R. L. & Akers, R. L. (1966). A differential association-reinforcement theory of criminal behavior. *Social Problems*, *14*(2), 128–147. https://doi.org/10.2307/798612

Burgoon, J. K., Stoner, G. A., Bonito, J. A. & Dunbar, N. E. (2003). Trust and deception in mediated communication. *36th Annual Hawaii International Conference on System Sciences, 2003*. https://doi.org/10.1109/hicss.2003.1173792

Cai, W., Huang, X., Wu, S. & Kou, Y. (2015). Dishonest behavior is not affected by an image of watching eyes. *Evolution and Human Behavior*, *36*(2), 110–116. https://doi.org/10.1016/j.evolhumbehav.2014.09.007

Cameron, J. S. & Miller, D. T. (2009). Ethical standards in gain versus loss frames. In David De Cremer (Hrsg.), *Psychological Perspectives on Ethical Behavior and Decision Making* (S. 91–106). Information Age Publishing.

Capraro, V. (2018). Gender differences in lying in sender-receiver games: A meta-analysis. *Judgment and Decision Making*, *13*(4), 345–355. https://doi.org/10.1017/s1930297500009220

Cartwright, E. & Xue, L. (2020). Lie aversion, anonymity and social distance: Are people more willing to lie using a mobile phone? *SSRN Electronic Journal.* https://doi.org/10.2139/ssrn.3598023

Charness, G., Blanco-Jimenez, C., Ezquerra, L. & Rodriguez-Lara, I. (2019). Cheating, incentives, and money manipulation. *Experimental Economics*, *22*(1), 155–177. https://doi.org/10.1007/s10683-018-9584-1

Childs, J. (2012). Gender differences in lying. *Economics Letters*, *114*(2), 147–149. https://doi.org/10.1016/j.econlet.2011.10.006

Chou, E. Y. (2015). What's in a name? The toll e-signatures take on individual honesty. *Journal of Experimental Social Psychology*, *61*, 84–95. https://doi.org/10.1016/j.jesp.2015.07.010

Chowdhury, S. M., Jeon, J. Y., Kim, C. & Kim, S.-H. (2021). Gender differences in repeated dishonest behavior: Experimental evidence. *Games*, *12*(2), 44. https://doi.org/10.3390/g12020044

Cialdini, R. B., Reno, R. R. & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, *58*(6), 1015–1026. https://doi.org/10.1037/0022-3514.58.6.1015

Clot, S., Grolleau, G. & Ibanez, L. (2014). Smug alert! Exploring self-licensing behavior in a cheating game. *Economics Letters*, *123*(2), 191–194. https://doi.org/10.1016/j.econlet.2014.01.039

Cohen, T. R., Wolf, S. T., Panter, A. T. & Insko, C. A. (2011). Introducing the GASP scale: A new measure of guilt and shame proneness. *Journal of Personality and Social Psychology*, *100*(5), 947–966. https://doi.org/10.1037/a0022641

Cohn, A., Gesche, T. & Maréchal, M. A. (2022). Honesty in the digital age. *Management Science*, *68*(2), 827–845. https://doi.org/10.1287/mnsc.2021.3985

Coleman, J. S. (1990). *Foundations of Social Theory*. Belknap Press of Harvard Univ. Press.

Croson, R. & Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic Literature*, *47*(2), 448–474. https://doi.org/10.1257/jel.47.2.448

Crowne, D. P. & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, *24*(4), 349–354. https://doi.org/10.1037/h0047358

Dahrendorf, R. (2006). *Homo Sociologicus: Ein Versuch zur Geschichte, Bedeutung und Kritik der Kategorie der sozialen Rolle* (16. Aufl.). VS Verl. für Sozialwiss. https://doi.org/10.1007/978-3-531-90216-6

Dana, J., Weber, R. A. & Kuang, J. X. (2007). Exploiting moral wiggle room: Experiments demonstrating an illusory preference for fairness. *Economic Theory*, *33*(1), 67–80. https://doi.org/10.1007/s00199-006-0153-z

Davis, J. P., Farnham, S. & Jensen, C. (2002). Decreasing online 'bad' behavior. In L. Terveen (Hrsg.), *ACM Conferences, CHI '02 Extended Abstracts on Human Factors in Computing Systems* (S. 718–719). ACM. https://doi.org/10.1145/506443.506563

Davoren, A. K., Rulison, K., Milroy, J., Grist, P., Fedoruk, M., Lewis, L. & Wyrick, D. (2024). Doping Prevalence among U.S. Elite Athletes Subject to Drug Testing under the World Anti-Doping Code. *Sports Medicine - Open*, *10*(1), 57. https://doi.org/10.1186/s40798-024-00721-9

DePaulo, B. M., Kashy, D. A., Kirkendol, S. E., Wyer, M. M. & Epstein, J. A. (1996). Lying in everyday life. *Journal of Personality and Social Psychology*, *70*(5), 979–995. https://doi.org/10.1037/0022-3514.70.5.979

Dickinson, D. L. & McEvoy, D. M. (2020). Further from the truth: The impact of In-Person, Online, and Mturk on dishonest behavior. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3691399

Diekmann, A., Przepiorka, W. & Rauhut, H. (2011). Die Präventivwirkung des Nichtwissens im Experiment. *Zeitschrift für Soziologie*, *40*(1), 74–84. https://doi.org/10.1515/zfsoz-2011-0105

Dreber, A. & Johannesson, M. (2008). Gender differences in deception. *Economics Letters*, *99*(1), 197–199. https://doi.org/10.1016/j.econlet.2007.06.027

Duda, J. L. & Nicholls, J. G. (1992). Dimensions of achievement motivation in schoolwork and sport. *Journal of Educational Psychology*, *84*(3), 290–299. https://doi.org/10.1037/0022-0663.84.3.290

Eagly, A. H. & Wood, W. (2012). Social Role Theory. In P. A. M. van Lange, E. T. Higgins & A. W. Kruglanski (Hrsg.), *Handbook of Theories of Social Psychology* (S. 458–476). SAGE Publications Ltd. https://doi.org/10.4135/9781446249222.n49

Eckel, C. C. & Grossman, P. J. (2008). Men, women and risk aversion: Experimental evidence. *Handbook of Experimental Economics Results*(1), 1061–1073. https://doi.org/10.1016/s1574-0722(07)00113-8

Effron, D. A. (2016). Beyond "being good frees us to be bad". Moral self-licensing and the fabrication of moral credentials. In J.-W. van Prooijen & P. A. M. van Lange (Hrsg.), *Cheating, Corruption, and Concealment: The Roots of Dishonesty* (S. 33–54). Cambridge University Press.

Elbe, A.-M. & Pitsch, W. (2018). Doping prevalence among Danish elite athletes. *Performance Enhancement & Health*, *6*(1), 28–32. https://doi.org/10.1016/j.peh.2018.01.001

Erat, S. & Gneezy, U. (2012). White Lies. *Management Science*, *58*(4), 723–733. https://doi.org/10.1287/mnsc.1110.1449

Esser, H. (1999). *Soziologie: Spezielle Grundlagen*. Campus-Verl.

Ezquerra, L., Kolev, G. I. & Rodriguez-Lara, I. (2018). Gender differences in cheating: Loss vs. gain framing. *Economics Letters*, *163*, 46–49. https://doi.org/10.1016/j.econlet.2017.11.016

Fischbacher, U. & Föllmi-Heusi, F. (2013). Lies in disguise - an experimental study on cheating. *Journal of the European Economic Association*, *11*(3), 525–547. https://doi.org/10.1111/jeea.12014

Fosgaard, T. R. (2020). Students cheat more: Comparing the dishonesty of a student sample and a representative sample in the laboratory. *The Scandinavian Journal of Economics*, *122*(1), 257–279. https://doi.org/10.1111/sjoe.12326

Friesen, L. & Gangadharan, L. (2012). Individual level evidence of dishonesty and the gender effect. *Economics Letters*, *117*(3), 624–626. https://doi.org/10.1016/j.econlet.2012.08.005

Friesen, L. & Gangadharan, L. (2013). Designing self-reporting regimes to encourage truth telling: An experimental study. *Journal of Economic Behavior & Organization*, *94*, 90–102. https://doi.org/10.1016/j.jebo.2013.08.007

Gal, D. & Rucker, D. D. (2018). The loss of loss aversion: Will it loom larger than its dain? *Journal of Consumer Psychology*, *28*(3), 497–516. https://doi.org/10.1002/jcpy.1047

Garbarino, E., Slonim, R. & Villeval, M. C. (2019). Loss aversion and lying behavior. *Journal of Economic Behavior & Organization*, *158*, 379–393. https://doi.org/10.1016/j.jebo.2018.12.008

Garrett, N., Lazzaro, S. C., Ariely, D. & Sharot, T. (2016). The brain adapts to dishonesty. *Nature Neuroscience*, *19*(12), 1727–1732. https://doi.org/10.1038/nn.4426

Gerlach, P. & Teodorescu, K. (2022). Measuring dishonest behavior: Hidden dimensions that matter. *Current Opinion in Psychology*, *47*, 101408. https://doi.org/10.1016/j.copsyc.2022.101408

Gerlach, P., Teodorescu, K. & Hertwig, R. (2019). The truth about lies: A meta-analysis on dishonest behavior. *Psychological Bulletin*, *145*(1), 1–44. https://doi.org/10.1037/bul0000174

Gino, F., Ayal, S. & Ariely, D. (2009). Contagion and differentiation in unethical behavior: The effect of one bad apple on the barrel. *Psychological Science*, *20*(3), 393–398. https://doi.org/10.1111/j.1467-9280.2009.02306.x

Gneezy, U. (2005). Deception: The role of consequences. *American Economic Review*, *95*(1), 384–394. https://doi.org/10.1257/0002828053828662

Gneezy, U., Rockenbach, B. & Serra-Garcia, M. (2013). Measuring lying aversion. *Journal of Economic Behavior & Organization*, *93*, 293–300. https://doi.org/10.1016/j.jebo.2013.03.025

Gotlib, T. & Converse, P. (2010). Dishonest behavior: The impact of prior self-regulatory exertion and personality. *Journal of Applied Social Psychology*, *40*(12), 3169–3191. https://doi.org/10.1111/j.1559-1816.2010.00696.x

Grolleau, G., Kocher, M. G. & Sutan, A. (2016). Cheating and loss aversion: Do people cheat more to avoid a loss? *Management Science*, *62*(12), 3428–3438. https://doi.org/10.1287/mnsc.2015.2313

Grosch, K. & Rau, H. A. (2017). Gender differences in honesty: The role of social value orientation. *Journal of Economic Psychology*, *62*, 258–267. https://doi.org/10.1016/j.joep.2017.07.008

Grym, J. & Liljander, V. (2016). To cheat or not to cheat? The effect of a moral reminder on cheating. *Nordic Journal of Business, 65*(3-4).

Gunia, B. C., Barnes, C. M. & Sah, S. (2014). The morality of larks and owls: Unethical behavior depends on chronotype as well as time of day. *Psychological Science*, *25*(12), 2272–2274. https://doi.org/10.1177/0956797614541989

Harinck, F., van Dijk, E., van Beest, I. & Mersmann, P. (2007). When gains loom larger than losses: Reversed loss aversion for small amounts of money. *Psychological Science*, *18*(12), 1099–1105. https://doi.org/10.1111/j.1467-9280.2007.02031.x

Hart, C. L., Curtis, D. A. & Terrizzi, J. A. (2024). Development and validation of the pathological lying inventory. *Current Psychology*, *43*(24), 21218–21228. https://doi.org/10.1007/s12144-024-05900-1

Heck, D. W., Thielmann, I., Moshagen, M. & Hilbig, B. E. (2018). Who lies? A large-scale reanalysis linking basic personality traits to unethical decision making. *Judgment and Decision Making*, *13*(4), 356–371. https://doi.org/10.1017/S1930297500009232

Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H. & McElreath, R. (2001). In search of homo economicus: Behavioral experiments in 15 small-scale societies. *American Economic Review*, *91*(2), 73–78. https://doi.org/10.1257/aer.91.2.73

Heyman, T., Vankrunkelsven, H., Voorspoels, W., White, A., Storms, G. & Verheyen, S. (2020). When cheating is an honest mistake: A critical evaluation of the matrix task as a measure of dishonesty. *Collabra: Psychology*, *6*(1), Artikel 12. https://doi.org/10.1525/collabra.294

Higgins, E. T. & Liberman, N. (2018). The loss of loss aversion: Paying attention to reference points. *Journal of Consumer Psychology*, *28*(3), 523–532. https://doi.org/10.1002/jcpy.1045

Hilbig, B. E., Thielmann, I. & Heck, D. W. (2024). Filling in the missing pieces: Personality traits (un)related to dishonest behavior. *European Journal of Personality*, *39*(5), 732–746. https://doi.org/10.1177/08902070241293621

Hilbig, B. E. & Zettler, I. (2015). When the cat's away, some mice will play: A basic trait account of dishonest behavior. *Journal of Research in Personality*, *57*, 72–88. https://doi.org/10.1016/j.jrp.2015.04.003

Hoffmann, E., McCabe, K. & Smith, V. L. (1996). Social distance and other-regarding behavior in dictator games. *The American economic review*, *86*(3), 653–660. https://www.jstor.org/stable/2118218

Huynh, T. (2020). Replication: Cheating, loss aversion, and moral attitudes in Vietnam. *Journal of Economic Psychology*, *78*, 102277. https://doi.org/10.1016/j.joep.2020.102277

Jain, A. K. (2001). Corruption: A review. *Journal of Economic Surveys*, *15*(1), 71–121. https://doi.org/10.1111/1467-6419.00133

Janke, S., Rudert, S. C., Petersen, Ä., Fritz, T. M. & Daumiller, M. (2021). Cheating in the wake of COVID-19: How dangerous is ad-hoc online testing for academic integrity? *Computers and Education Open*, *2*, 100055. https://doi.org/10.1016/j.caeo.2021.100055

Kahneman, D. & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47*(2), 263. https://doi.org/10.2307/1914185

Kajackaite, A. & Gneezy, U. (2017). Incentives and cheating. *Games and Economic Behavior*, *102*, 433–444. https://doi.org/10.1016/j.geb.2017.01.015

Karabenick, S. A. & Srull, T. K. (1978). Effects of personality and situational variation in locus of control on cheating: Determinants of the "congruence effect". *Journal of Personality*, *46*(1), 72–95. https://doi.org/10.1111/j.1467-6494.1978.tb00603.x

Kennedy, J. A. & Kray, L. J. (2022). Gender similarities and differences in dishonesty. *Current Opinion in Psychology*, *48*, 101461. https://doi.org/10.1016/j.copsyc.2022.101461

Kennedy, J. A., Kray, L. J. & Ku, G. (2017). A social-cognitive approach to understanding gender differences in negotiator ethics: The role of moral identity. *Organizational Behavior and Human Decision Processes*, *138*, 28–44. https://doi.org/10.1016/j.obhdp.2016.11.003

Kennette, L. N. & Jelenic, M. (2023). Cheating: It depends how you define it. *Canadian Perspectives on Academic Integrity*, *5*(2), 16–33. https://doi.org/10.11575/cpai.v5i2.75649

Kern, M. C. & Chugh, D. (2009). Bounded ethicality: The perils of loss framing. *Psychological Science*, *20*(3), 378–384. https://doi.org/10.1111/j.1467-9280.2009.02296.x

Klein, S. A., Thielmann, I., Hilbig, B. E. & Heck, D. W. (2020). On the robustness of the association between Honesty-Humility and dishonest behavior for varying incentives. *Journal of Research in Personality*, *88*, 104006. https://doi.org/10.1016/j.jrp.2020.104006

Kleinlogel, E. P., Dietz, J. & Antonakis, J. (2017). Lucky, Competent, or Just a Cheat? Interactive Effects of Honesty-Humility and Moral Cues on Cheating Behavior. *Personality and Social Psychology Bulletin*, *44*(2), 158–172. https://doi.org/10.1177/0146167217733071

Köbis, N. C., van Prooijen, J.-W., Righetti, F. & van Lange, P. A. M. (2019). *The look over the shoulder–Corruption and cheating decreases in the presence of another person*. Manuscript in Bearbeitung.

Kolesnyk, D., Jong, M. G. de & Pieters, R. (2021). Gender gaps in deceptive self-presentation on Social-Media platforms vary with gender equality: A multinational investigation. *Psychological Science*, *32*(12), 1952–1964. https://doi.org/10.1177/09567976211016395

Korndörfer, M., Krumpal, I. & Schmukle, S. C. (2014). Measuring and explaining tax evasion: Improving self-reports using the crosswise model. *Journal of Economic Psychology*, *45*, 18–32. https://doi.org/10.1016/j.joep.2014.08.001

Kouchaki, M. & Smith, I. H. (2014). The morning morality effect: The influence of time of day on unethical behavior. *Psychological Science*, *25*(1), 95–102. https://doi.org/10.1177/0956797613498099

Kroher, M. & Wolbring, T. (2015). Social control, social learning, and cheating: Evidence from lab and online experiments on dishonesty. *Social Science Research*, *53*, 311–324. https://doi.org/10.1016/j.ssresearch.2015.06.003

Lamnek, S. (2021). *Theorien abweichenden Verhaltens: Eine Einführung für Soziologen, Psychologen, Juristen, Journalisten und Sozialarbeiter* (11., durchgesehene Auflage). Fink.

Lee, K. & Ashton, M. C. (2004). Psychometric Properties of the HEXACO Personality Inventory. *Multivariate Behavioral Research*, *39*(2), 329–358. https://doi.org/10.1207/s15327906mbr3902_8

Lee, S. D., Kuncel, N. R. & Gau, J. (2020). Personality, attitude, and demographic correlates of academic dishonesty: A meta-analysis. *Psychological Bulletin*, *146*(11), 1042–1058. https://doi.org/10.1037/bul0000300

Levine, E. E., Bitterly, T. B., Cohen, T. R. & Schweitzer, M. E. (2018). Who is trustworthy? Predicting trustworthy intentions and behavior. *Journal of personality and social psychology*, *115*(3), 468–494. https://doi.org/10.1037/pspi0000136

Levine, E. E. & Schweitzer, M. E. (2014). Are liars ethical? On the tension between benevolence and honesty. *Journal of Experimental Social Psychology*, *53*, 107–117. https://doi.org/10.1016/j.jesp.2014.03.005

Lieberman, A. & Schroeder, J. (2020). Two social lives: How differences between online and offline interaction influence social outcomes. *Current Opinion in Psychology*, *31*, 16–21. https://doi.org/10.1016/j.copsyc.2019.06.022

Liu, J., Shen, Q., Zhang, J., Beyens, U., Cai, W., Decety, J. & Li, H. (2021). The Difference Spotting Task: A new nonverbal measure of cheating behavior. *Behavior Research Methods*, *53*(5), 1935–1944. https://doi.org/10.3758/s13428-020-01526-w

Loewen, P. J., Dawes, C. T., Mazar, N., Johannesson, M., Koellinger, P. & Magnusson, P. K. (2013). The heritability of moral standards for everyday dishonesty. *Journal of Economic Behavior & Organization*, *93*, 363–366. https://doi.org/10.1016/j.jebo.2013.05.001

Lohse, T. & Qari, S. (2021). Gender differences in face-to-face deceptive behavior. *Journal of Economic Behavior & Organization*, *187*, 1–15. https://doi.org/10.1016/j.jebo.2021.03.026

Lois, G. & Wessa, M. (2021). Honest mistake or perhaps not: The role of descriptive and injunctive norms on the magnitude of dishonesty. *Journal of Behavioral Decision Making*, *34*(1), 20–34. https://doi.org/10.1002/bdm.2196

Mazar, N., Amir, O. & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. *Journal of Marketing Research*, *45*(6), 633–644. https://doi.org/10.1509/jmkr.45.6.633

Moshagen, M. & Hilbig, B. E. (2017). The statistical analysis of cheating paradigms. *Behavior Research Methods*, *49*(2), 724–732. https://doi.org/10.3758/s13428-016-0729-x

Muñoz García, A., Gil-Gómez de Liaño, B. & Pascual-Ezama, D. (2021). Gender differences in individual dishonesty profiles. *Frontiers in Psychology*, *12*, 728115. https://doi.org/10.3389/fpsyg.2021.728115

Nieper, A. S., Beersma, B., Dijkstra, M. T. M. & van Kleef, G. A. (2025). When and why does observability increase honesty? The role of gossip and reputational concern. *Judgment and Decision Making*, *20.* https://doi.org/10.1017/jdm.2024.10

Nisan, M. (2013). The moral balance model: Theory and research extending our understanding of moral choice and deviation. In W. M. Kurtines, J. Gewirtz & J. L. Lamb (Hrsg.), *Handbook of Moral Behavior and Development* (S. 213–250). Psychology Press. https://doi.org/10.4324/9780203763070-10

Nisan, M. & Horenczyk, G. (1990). Moral balance: The effect of prior behaviour on decision in moral conflict. *The British Journal of Social Psychology*, *29(1)*, 29–42. https://doi.org/10.1111/j.2044-8309.1990.tb00884.x

O'Connor, A. M., Judges, R. A., Lee, K. & Evans, A. D. (2021). Examining honesty–humility and cheating behaviors across younger and older adults. *International Journal of Behavioral Development*, *46*(2), 112–117. https://doi.org/10.1177/01650254211039022

O'Grady, C. (15. März 2024). Honesty researcher committed research misconduct, according to newly unsealed Harvard report. *American Association for the Advancement of Science*. https://www.science.org/content/article/honesty-researcher-committed-research-misconduct-according-newly-unsealed-harvard

Oda, R., Kato, Y. & Hiraishi, K. (2015). The watching-eye effect on prosocial lying. *Evolutionary Psychology*, *13*(3), 1474704915594959. https://doi.org/10.1177/1474704915594959

Opp, K.-D. (1974). *Abweichendes Verhalten und Gesellschaftsstruktur*. Hermann Luchterhand.

Opp, K.-D. (1999). Contending conceptions of the theory of rational action. *Journal of Theoretical Politics*, *11*(2), 171–202. https://doi.org/10.1177/0951692899011002002

Ortiz, J. M., Zindel, M. & Da Silva, S. (2023). The effect of loss aversion and entitlement on cheating: An online experiment. *Acta Psychologica*, *233*, 103843. https://doi.org/10.1016/j.actpsy.2023.103843

Pascaru-Goncear, V. (2023). Determining causes of deviant behavior in students. *Revista Romaneasca pentru Educatie Multidimensionala*, *15*(3), 98–106. https://doi.org/10.18662/rrem/15.3/756

Pascual-Ezama, D., Fosgaard, T. R., Cardenas, J. C., Kujal, P., Veszteg, R., Gil-Gómez de Liaño, B., Gunia, B., Weichselbaumer, D., Hilken, K., Antinyan, A., Delnoij, J., Proestakis, A., Tira, M. D.,

Pratomo, Y., Jaber-López, T. & Brañas-Garza, P. (2015). Context-dependent cheating: Experimental evidence from 16 countries. *Journal of Economic Behavior & Organization*, *116*, 379–386. https://doi.org/10.1016/j.jebo.2015.04.020

Pfattheicher, S., Schindler, S. & Nockur, L. (2019). On the impact of Honesty-Humility and a cue of being watched on cheating behavior. *Journal of Economic Psychology*, *71*, 159–174. https://doi.org/10.1016/j.joep.2018.06.004

Pitsch, W. & Emrich, E. (2012). The frequency of doping in elite sport: Results of a replication study. *International review for the sociology of sport. 47*(5), 559–580. https://doi.org/10.1177/1012690211413969

Plessen, C. Y., Gyimesi, M. L., Kern, B. M. J., Fritz, T. M., Catalán Lorca, M. V., Voracek, M. & Tran, U. S. (2020). *Associations between academic dishonesty and personality: A pre-registered multilevel meta-analysis*. Center for Open Science. https://doi.org/10.31234/osf.io/pav2f

Popitz, H. (1968). *Über die Präventivwirkung des Nichtwissens: Dunkelziffer, Norm und Strafe*. Mohr Siebeck. https://doi.org/10.1628/978-3-16-170214-3

Popitz, H. (2016). Über die Präventivwirkung des Nichtwissens. Dunkelziffer, Norm und Strafe. In D. Klimke & A. Legnaro (Hrsg.), *Kriminologische Grundlagentexte* (S. 33–46). Springer VS. https://doi.org/10.1007/978-3-658-06504-1_3

Reinhardt, N. & Reinhard, M.-A. (2023). Honesty-humility negatively correlates with dishonesty in romantic relationships. *Journal of Personality and Social Psychology*, *125*(4), 925–942. https://doi.org/10.1037/pspp0000456

Reis, M., Pfister, R. & Foerster, A. (2023). Cognitive load promotes honesty. *Psychological Research*, *87*(3), 826–844. https://doi.org/10.1007/s00426-022-01686-8

Rengifo, M. & Laham, S. M. (2022). Big Five personality predictors of moral disengagement: A comprehensive aspect-level approach. *Personality and Individual Differences*, *184*, 111176. https://doi.org/10.1016/j.paid.2021.111176

Reno, R. R., Cialdini, R. B. & Kallgren, C. A. (1993). The transsituational influence of social norms. *Journal of Personality and Social Psychology*, *64*(1), 104–112. https://doi.org/10.1037/0022-3514.64.1.104

Rethorst, S. & Wehrmann, R. (1998). Der TEOSQ-D zur Messung der Zielorientierung im Sport. In D. Teipel, R. Kemper & D. Heinemann (Hrsg.), *Sportpschologische Diagnostik, Prognostik und Intervention* (S. 57–62).

Rosenbaum, S. M., Billinger, S. & Stieglitz, N. (2014). Let's be honest: A review of experimental evidence of honesty and truth-telling. *Journal of Economic Psychology*, *45*, 181–196. https://doi.org/10.1016/j.joep.2014.10.002

Ruffle, B. J. & Tobol, Y. (2014). Honest on Mondays: Honesty and the temporal separation between decisions and payoffs. *European Economic Review*, *65*, 126–135. https://doi.org/10.1016/j.euroecorev.2013.11.004

Schamasch, P. & Rabin, O. (2012). Challenges and perspectives in anti-doping testing. *Bioanalysis*, *4*(13), 1691–1701. https://doi.org/10.4155/bio.12.145

Schindler, S. & Pfattheicher, S. (2017). The frame of the game: Loss-framing increases dishonest behavior. *Journal of Experimental Social Psychology*, *69*, 172–177. https://doi.org/10.1016/j.jesp.2016.09.009

Schniter, E. & Shields, T. W. (2020). Gender, Stereotypes, and Trust in Communication. *Human Nature*, *31*(3), 296–321. https://doi.org/10.1007/s12110-020-09376-3

Sen, A. (1977). Rational fools: A critique of the behavioral foundations of economic theory. *Philosophy & Public Affairs*, 317-344.

Serota, K. B., Levine, T. R. & Boster, F. J. (2010). The prevalence of lying in America: Three studies of self-reported lies. *Human Communication Research*, *36*(1), 2–25. https://doi.org/10.1111/j.1468-2958.2009.01366.x

Serota, K. B., Levine, T. R. & Docan-Morgan, T. (2022). Unpacking variation in lie prevalence: Prolific liars, bad lie days, or both? *Communication Monographs*, *89*(3), 307–331. https://doi.org/10.1080/03637751.2021.1985153

Shalvi, S. (2012). Dishonestly increasing the likelihood of winning. *Judgment and Decision Making*, *7*(3), 292–303. https://doi.org/10.1017/S1930297500002266

Shen, Q., Teo, M., Winter, E., Hart, E., Chew, S. H. & Ebstein, R. P. (2016). To Cheat or not to cheat: Tryptophan Hydroxylase 2 SNP variants contribute to dishonest behavior. *Frontiers in Behavioral Neuroscience*, *10*, 82. https://doi.org/10.3389/fnbeh.2016.00082

Simola, P., Virtanen, T. & Sartonen, M. (2020). Information security, personality, and justifications for norm violation. *Journal of Information Warfare*, *19*(2), 62–75. https://www.jstor.org/stable/27033621

Smith, K. & Hatemi, P. K. (2020). Are moral intuitions heritable? *Human Nature*, *31*(4), 406–420. https://doi.org/10.1007/s12110-020-09380-7

Steinel, W., Valtcheva, K., Gross, J., Celse, J., Max, S. & Shalvi, S. (2022). (Dis)honesty in the face of uncertain gains or losses. *Journal of Economic Psychology*, *90*, 102487. https://doi.org/10.1016/j.joep.2022.102487

Steinmetz, J. & Posten, A.-C. (2018). White lies and black lies: What they have in common and how they differ. *InMind Magazine*, *37*.

Stöber, J. (1999). Die Soziale-Erwünschtheits-Skala-17 (SES-17): Entwicklung und erste Befunde zu Reliabilität und Validität. *Diagnostica*, *45*(4), 173–177. https://doi.org/10.1026//0012-1924.45.4.173

Suler, J. (2004). The online disinhibition effect. *Cyberpsychology & Behavior, 7*(3), 321–326. https://doi.org/10.1089/1094931041291295

Sykes, G. M. & Matza, D. (1957). Techniques of neutralization: A theory of delinquency. *American Sociological Review*, *22*(6), 664. https://doi.org/10.2307/2089195

Tao, L. & Au, W. (2014). Values, self and other-regarding behavior in the dictator game. *Rationality and Society*, *26*(1), 46–72. https://doi.org/10.1177/1043463113512995

Thielmann, I. & Hilbig, B. E. (2019). No gain without pain: The psychological costs of dishonesty. *Journal of Economic Psychology*, *71*, 126–137. https://doi.org/10.1016/j.joep.2018.06.001

Thielmann, I., Hilbig, B. E., Klein, S. A., Seidl, A. & Heck, D. W. (2023). Cheating to benefit others? On the relation between Honesty-Humility and prosocial lies. *Journal of Personality*, *92*(3), 870–882. https://doi.org/10.1111/jopy.12835

Thielmann, I., Hilbig, B. E., Schild, C. & Heck, D. W. (2025). Cheat, cheat, repeat: On the consistency of dishonest behavior in structurally comparable situations. *Journal of Personality and Social Psychology*, *128*(5), 1209–1225. https://doi.org/10.1037/pspp0000540

Tranow, U. (2024). Norm, soziale. In J. Kopp & A. Steinbach (Hrsg.), *Lehrbuch. Grundbegriffe der Soziologie* (S. 389–393). Springer VS. https://doi.org/10.1007/978-3-658-42676-7_66

Tversky, A. & Kahneman,D. (1981). The framing of decisions and the psychology of choice. *Science, 211*(4481), 453–458. https://doi.org/10.1126/science.7455683

Tyler, J. M. & Feldman, R. S. (2004). Truth, lies, and self-presentation: How gender and anticipated future interaction relate to deceptive behavior. *Journal of Applied Social Psychology,* 34(12), 2602–2615. https://doi.org/10.1111/j.1559-1816.2004.tb01994.x

van Bommel, M., van Prooijen, J.-W., Elffers, H. & van Lange, P. A. (2012). Be aware to care: Public self-awareness leads to a reversal of the bystander effect. *Journal of Experimental Social Psychology*, *48*(4), 926–930. https://doi.org/10.1016/j.jesp.2012.02.011

van Driel, H. (2019). Financial fraud, scandals, and regulation: A conceptual framework and literature review. *Business History*, *61*(8), 1259–1299. https://doi.org/10.1080/00076791.2018.1519026

van Prooijen, J.-W. & van Lange, P. A. M. (2016). Cheating, corruption, and concealment. An introduction to dishonesty. In J.-W. van Prooijen & P. A. M. van Lange (Hrsg.), *Cheating, Corruption, and Concealment: The Roots of Dishonesty* (S. 1–11). Cambridge University Press.

Varvarigos, D. & Xin, G. (2020). Social distance and economic development. *Macroeconomic Dynamics*, *24*(4), 860–881. https://doi.org/10.1017/s1365100518000512

Verigin, B. L., Meijer, E. H., Bogaard, G. & Vrij, A. (2019). Lie prevalence, lie characteristics and strategies of self-reported good liars. *PloS One*, *14*(12), e0225566. https://doi.org/10.1371/journal.pone.0225566

WADA. (2023). *World Anti Doping Programm. Anti-Doping Rule Violations Report*.

Waeber, A. (2021). Investigating dishonesty-does context matter? *Frontiers in Psychology*, *12*, 684735. https://doi.org/10.3389/fpsyg.2021.684735

Wang, S. & Chen, T. (2021). When and why contexts predict unethical behavior: Evidence from a laboratory bribery game. *Frontiers in Psychology*, *12*, 675319. https://doi.org/10.3389/fpsyg.2021.675319

Ward, D. A. & Beck, W. L. (1990). Gender and dishonesty. *The Journal of Social Psychology*, *130*(3), 333–339. https://doi.org/10.1080/00224545.1990.9924589

Weber, M. (1976). *Wirtschaft und Gesellschaft: Grundriss der verstehenden Soziologie*. Mohr.

Weise, P. (1989). Homo oeconomicus und homo sociologicus. *Zeitschrift für Soziologie*, *18*(2), 148–161. https://doi.org/10.1515/zfsoz-1989-0205

Welsh, D. T., Ordóñez, L. D., Snyder, D. G. & Christian, M. S. (2015). The slippery slope: How small ethical transgressions pave the way for larger future transgressions. *Journal of Applied Psychology*, *100*(1), 114–127. https://doi.org/10.1037/a0036950

Whisman, M. A. & Snyder, D. K. (2007). Sexual infidelity in a national survey of American women: Differences in prevalence and correlates as a function of method of assessment. *Journal of Family Psychology, 21*(2), 147–154. https://doi.org/10.1037/0893-3200.21.2.147

Wyszynski, M. & Bauer, A. M. (2023). Give what is required and take only what you need! The effect of framing on rule-breaking in social dilemmas. *Judgment and Decision Making*, *18.* https://doi.org/10.1017/jdm.2023.18

Yaniv, G., Greenberg, D. & Siniver, E. (2019). Telling an impossible lie: Detecting individual cheating in a die-under-the-cup task. *Review of Behavioral Economics*, *6*(2), 119–131. https://doi.org/10.1561/105.00000100

Yar, M. (2014). *Crime, deviance and doping: Fallen sports stars, autobiography and the management of stigma*. *Palgrave pivot*. Palgrave Macmillan. https://doi.org/10.1057/9781137403759

Anhang

Anhang 1: **Beitrag 1**

Leisge, K., Kaczmarek, C., & Schaefer, S. (2024). How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior. *Frontiers in Psychology*, 15. https://doi.org/10.3389/fpsyg.2024.1297058

Anhang 2: **Beitrag 2**

Leisge, K., Heggenberger, A., Kaczmarek, C., Pitsch, W., & Schaefer, S. (2025). Tracing the lines of deceit. Male cheating behavior increases in online versus face-to-face environments over time. *Acta Psychologica*, 259, 105373. https://doi.org/10.1016/j.actpsy.2025.105373

Anhang 3: **Beitrag 3**

Leisge, K., Pitsch, W., & Schaefer, S. (im Review Prozess). Spotting the difference from lab to screen: How social distance and anonymity affect dishonesty. [Eingereicht bei Acta Psychologica]

Anhang 4: **Beitrag 4**

Leisge, K., Welsch, L., Pitsch, W., & Schaefer, S. (in Druck). Framing effects and social context as determinants of dishonest behavior. *Discover Psychology*. https://doi.org/ 10.1007/s44202-025-00494-6

Anhang 5: **Beitrag 5**

Leisge, K., Heggenberger, A., & Schaefer, S. (im Review Prozess). (Dis)Honest when (Un)Seen: Observer presence decreases dishonest behavior. [Eingereicht bei Journal of Economic Psychology]

Anhang 1: Beitrag 1

Leisge, K., Kaczmarek, C., & Schaefer, S. (2024). How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior. ***Frontiers in Psychology*****, 15. https://doi.org/10.3389/fpsyg.2024.1297058**

frontiers | Frontiers in Psychology

TYPE Original Research
PUBLISHED 20 June 2024
DOI 10.3389/fpsyg.2024.1297058

OPEN ACCESS

EDITED BY
Judee K. Burgoon,
University of Arizona, United States

REVIEWED BY
Kim Serota,
Oakland University, United States
Xinran Wang,
Colorado State University, United States

*CORRESPONDENCE
Kai Leisge
kai.leisge@uni-saarland.de

RECEIVED 19 September 2023
ACCEPTED 31 May 2024
PUBLISHED 20 June 2024

CITATION
Leisge K, Kaczmarek C and Schaefer S (2024) How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior.
Front. Psychol. 15:1297058.
doi: 10.3389/fpsyg.2024.1297058

How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior

Kai Leisge*, Christian Kaczmarek and Sabine Schaefer

Institute of Sport Sciences, Saarland University, Saarbrücken, Germany

Dishonesty, including lying, cheating, deception, and deviating from societal norms, has far-reaching implications across various aspects of modern society. From minor consequences like social discontent to severe outcomes such as economic damage through tax evasion, dishonest behavior affects us in multiple ways. This study investigates whether gender and psychological traits contribute to dishonest behavior, and whether unethical conduct is stable across diverse tasks. We examined 63 participants using a "Difference Spotting Task" (DST) and two motor tasks (1. coordinative throwing; 2. isometric strength). Dishonesty was measured by comparing self-reported performance with actual performance, allowing for a comprehensive analysis of both occurrence and extent of dishonesty. Our findings indicate that gender does not significantly influence the occurrence or extent of dishonest behavior. Moreover, we discovered that "Social Desirability" positively influences the extent of dishonesty, while "Task Orientation" increases the likelihood of engaging in dishonest acts. The study also reveals that the level of dishonesty remains relatively stable across all three tasks at an intrapersonal level.

KEYWORDS

dishonesty, lying, cheating, deviation, psychological factors, intrapersonal stability, gender differences

1 Introduction

Social interactions in everyday life form the basis of human society, whether through verbal or non-verbal communication at work/education or in leisure activities such as sport. In order to maintain a functioning society, it is important that organizations and individuals follow certain rules or base their behavioral decisions on norms and moral values. Despite potential consequences for violating norms and moral values, such behavior is widespread, with approximately one-third of daily conversations involving deception or lies (Burgoon et al., 2003; van Kleef et al., 2015). These tendencies are also observed in sports, leading to distortions in competition, doping, corruption within associations, and fan violence (Frenger and Pitsch, 2021). A recent systematic review indicated doping prevalence rates in competitive sports ranging from 0 to 73% (Gleaves et al., 2021), with ~10% of recreational athletes in Europe engaging in the improper use of over-the-counter medication to enhance sporting performance (Christiansen et al., 2023). While minor norm deviations may cause no damage other than social discontent, major deviations in the form of bribery, doping, and tax evasion can lead to serious economic damage (Loewen et al., 2013).

The objective of this study is to identify factors influencing dishonesty in an experimental setting. Our paradigm allows us to investigate whether dishonest behavior shows variability or intrapersonal stability across different tasks.

Lies, deception and dishonest behavior come in many forms, and various terms are often used interchangeably to describe them. The following paragraphs outline the various contexts associated with dishonesty and introduce measures used to identify dishonest behavior. Two prominent theoretical perspectives, namely economic and social psychology (self-licensing), are discussed, providing insights into the interplay between material gain and self-perception. Additionally, the sociological approach introduces the concept of anomie by referring to Opp's specification (Opp, 1974; Lamnek, 2021). Combining these theories leads the way for formulating the hypothesis related to intrapersonal stability. The introduction continues by addressing gender and achievement motivation as factors potentially influencing dishonest behavior (DB), exploring various perspectives drawn from previous empirical studies.

A large and growing body of experimental research only addresses debates about who behaves dishonestly and under what circumstances (Fischbacher and Föllmi-Heusi, 2013; Clot et al., 2014; Ezquerra et al., 2018; Waeber, 2021). The following questions often remain unanswered: Why do humans cheat? What factors drive dishonesty? Is a person's tendency to behave dishonestly stable across different tasks or scenarios (intrapersonal stability; Muñoz García et al., 2021)? Understanding the determinants of dishonest behavior is crucial. It is essential for establishing ethical norms, implementing effective prevention strategies in different contexts, and shaping legislation and policies (Jacobsen et al., 2018). This understanding plays a key role in fostering integrity and trust both inside and outside of organizations (Kindsiko et al., 2013; LaDuke, 2013) and guides educational practices (Hodgkinson et al., 2016), while further advancing research in social psychology and human behavior. However, since dishonest behavior primarily revolves around violating rules or norms, its replication in an experimental set-up can be challenging (Jacobsen et al., 2018). People often try to conceal this type of behavior or conform to social desirability, leading to the use of a relatively heterogeneous set of experimental tasks (Gerlach et al., 2019).

Data can either be collected at an aggregate or individual level. Prominent examples of measuring dishonesty at an aggregate level include "*coin-flip*" tasks (Chowdhury et al., 2021) or "*die-roll*" tasks (Grosch and Rau, 2017). In these tasks, participants can cheat to "win" by misreporting a randomly generated outcome (coin-flip or die-roll) that is not observable for the experimenter. The rate of dishonesty can only be estimated by comparing the aggregated reported "win" outcomes of a sufficiently large sample to the theoretical/statistical baseline distributions of expected "wins" (Rosenbaum et al., 2014). On the one hand, this may allow for anonymity, as individuals do not have to fear detection (Fischbacher and Föllmi-Heusi, 2013). On the other hand, it also makes it impossible to link specific personality traits to dishonesty. Commonly used measures to identify dishonesty at an individual level include ability tests, such as the *matrix* task (Mazar et al., 2008), where self-reported outcomes are compared to the actual performances, deception games, or unsolvable paradigms. In unsolvable paradigms, participants are asked to indicate whether they solved a specific task, even though the tasks are designed to be unsolvable (Liu et al., 2021). Examples such as "*sender-receiver*" games or "*tax compliance*" experiments are utilized to detect deceptive behavior in either interactive and non-interactive communication settings (Burgoon and Buller, 1994; Capraro, 2018). Despite some drawbacks (see Heyman et al., 2020; Liu et al., 2021 or Blume et al., 2002 for further information), these approaches allow for direct inferences about individual behavior, making them essential for accurately linking personal factors to dishonesty. One of the rarely discussed drawbacks of tasks like the *matrix* task is the occurrence of *honest mistakes* (Heyman et al., 2020). This term refers to the tendency for many small lies to actually be genuine errors. Since the *matrix* task heavily relies on the participants' mathematical abilities, it is particularly prone to these *honest mistakes*. Participants may unknowingly miscalculate and believe they have solved an unsolvable matrix, resulting in an honest error rather than a deliberate falsehood (Heyman et al., 2020).

1.1 Why do people engage in dishonest behavior?

When discussing the question as to why people display DB, two theories rooted in economics and social psychology are mentioned repeatedly. The economic perspective (*homo economicus*) can be described as a model of rational and selfish human behavior, where the expected external benefits are weighed against the costs of DB (Henrich et al., 2001; Mazar et al., 2008). Humans therefore would only show DB if the material incentives, in the sense of wealth maximizing, outweigh those of acting honestly (Becker, 1968; Rosenbaum et al., 2014; Gerlach et al., 2019). However, subjects are often reluctant to deviate to the maximum extent, which does not speak in favor of a solely economic approach (Mazar et al., 2008; Rosenbaum et al., 2014; Ezquerra et al., 2018; Abeler et al., 2019). A complementary perspective is given by the self-licensing theory. It is based on internalized norms of honesty and the existence of an intrinsic cost of DB (Rosenbaum et al., 2014). People are either (a) the ethical type and are unwilling to perform DB regardless of the benefit, or (b) a mixed type who appear to have a finite positive intrinsic cost of DB, and finally (c) the economic type who have a zero cost of DB (Kajackaite and Gneezy, 2017). Considering both of these perspectives, one might argue that people not only consider the material gain expected from DB, but also how this behavior influences their self-perception (Waeber, 2021). When linking these two theories to the aforementioned research question regarding intrapersonal stability or variability, a definitive direction cannot be unequivocally determined. Rather, it is reasonable to hypothesize that both intra- and interpersonal differences in DB may exist. While individuals categorized as the ethical or economical type demonstrate intrapersonal stability concerning conforming or dishonest behavior, participants classified as the mixed type exhibit behavioral variability across tasks.

Another theoretical access, rarely discussed in experimental research of DB, is provided by sociology. The basic idea of the anomie theory by Emil Durkheim is that a lack of ethical norms or social standards can cause a state of normlessness, resulting in uncertainty regarding the consequences of individual behavior (Lamnek, 2021). An extension and specification of this theory was introduced by Karl-Dieter Opp. He investigates the determinants and variables that could influence DB. The first variable he mentions is the "*intensity of goals internalized by the individual*," which measures the degree to which a person desires these achievements (Opp, 1968). The adaptation of these internalized goals may differ depending on the individual, their self-concept, and the specific experimental task. Participants for whom achieving a high performance in one of the tasks is more important than in the other two, will have varying goal intensities which can influence dishonest behavior. A second variable is given by the "*intensity of illegitimate norms*" and describes the acceptance of socially defined illegitimate means (Opp, 1974). Inter-individual differences among participants, influenced by socialization and cultural background, cannot be ruled out and may therefore impact DB. Lastly the "*degree of illegitimate means and opportunities*," is also essential when trying to explain DB (Simmler et al., 2017). To minimize the impact of this factor, the opportunities to engage in dishonest behavior should be equal for all participants in all conditions and tests. According to Opp, higher levels of these three factors favor the development of DB. This is contrasted by the variables "*intensity of legitimate norms*" and the "*degree of legitimate means and opportunities*," which focus on the beliefs that certain goals can be achieved legally and the extent to which individuals believe they can reach their goals by following legitimate paths (Opp, 1968, 1974; Lamnek, 2021). A higher degree of these two determinants reduces the likelihood of DB. The "*intensity of legitimate norms*" can also vary between individuals due to factors such as socialization processes or cultural distinctions. If the aspect "*degree of legitimate means and opportunities*" is attributed not only to situational contextual factors but also to the individual capabilities of each participant in the respective task, this may also influence DB. For instance, subjects with higher strength abilities have more pronounced means and opportunities to perform well in the corresponding task and thus achieve higher financial gain without being dishonest. If this assumption holds true, negative correlations should be found between the observed performance of individuals and the extent of DB.

According to this explanation, it would seem that DB is not only influenced by the trade-offs between external and internal resources, like the economic and social psychology approaches would suggest. It is rather a complex balancing act of internalized goals and the acceptance and extent of legitimate and illegitimate means. The question arises if this balancing act is internally stable for individuals (intrapersonal stability), or if it is being adapted for different tasks or scenarios (intrapersonal variability). Therefore, the following hypothesis is formulated:

H_1: *Participants will show behavioral stability of DB throughout the three tasks.*

Participants were told the goal of this study was to investigate cognitive learning processes within sensory (visual) perception. Contrary to the assumption made by Opp's Anomie Theory that high performance in various tasks leads to an increased "*degree of legitimate means and opportunities*," Liu et al. (2021) found evidence suggesting that this may not be the case for visual search ability. Due to these conflicting positions, this relationship will be further examined in the following exploratory hypothesis.

H_2: *Dishonest behavior will be more prevalent among individuals with high performances in a visual search task.*

1.2 Gender as an influencing factor for dishonest behavior

Gender may influence DB, but it is crucial to note that previous empirical studies are not conclusive. Several studies demonstrated that male participants show a higher level of DB than females (Grym and Liljander, 2016; Gerlach et al., 2019; Kennedy and Kray, 2022). For example, Grosch and Rau (2017) tested 268 participants in a "*die-roll*" task, similar to the approach by Fischbacher and Föllmi-Heusi (2013), and report a greater extent of DB for males compared to females. Waeber (2021) also reports that women are more honest on average than men in a task involving self-reported outcomes that influence their financial pay-out. Previous findings on deception in "*sender-receiver*" games (Dreber and Johannesson, 2008) or in a social interaction setting with face-to-face communication (Lohse and Qari, 2021) also lend support to this direction. Chowdhury et al. (2021) present different results depending on specific experimental instructions. This finding is consistent with other studies that have also found no gender differences (DePaulo et al., 1996; Aoki et al., 2010; Childs, 2012). For example, Ezquerra et al. (2018) also used the "*die-roll*" task to detect DB. They report that males and females do not cheat differently and therefore show DB to a similar extent. Additional results on deceptive behavior indicate that there are no gender differences observed in a "*sender-receiver*" game (Gylfason et al., 2013) or in a "*tax compliance*" experiment (Lohse and Qari, 2014). Few studies also suggest a higher amount of dishonesty or deception for women compared to men in a "die-roll" task (Clot et al., 2014; Ruffle and Tobol, 2014), or a deceptive communication experiment (Tyler and Feldman, 2004). Potential explanations for gender differences in DB include the prevalence of prosocial individuals (Grosch and Rau, 2017), the question of whether dishonest behavior could be planned (Chowdhury et al., 2021), cultural differences among the respective samples (Aoki et al., 2010; Childs, 2012), or highly specific samples and operationalizations of dishonesty (Ruffle and Tobol, 2014).

Given the heterogeneity of these results, a novel approach should be employed. Such an approach should allow for the reliable and repeated detection, at an individual level and across different tasks, not only of the mere existence of DB (in the following described as the binary variable "*frequency*" with the two levels "*dishonest*" and "*honest*") but also of its exact amount (referred to as the metric variable "*extent*" with different levels depending on the task). Based on varied evidence of DB in

both males and females, and acknowledging that the differences found are contingent upon various factors, we plan to analyse gender differences in an exploratory way without formulating directional hypotheses.

H_3: *The extent of DB will be different for males compared to females.*

H_4: *The number of participants showing DB will be different in males compared to females.*

1.3 Achievement motivation as an influencing factor

To further explain DB, it is important to consider other psychological determinants. One frequently discussed theory is based on the individual's achievement motivation (Nicholls, 1989). People with a higher focus on task orientation tend to use self-referential criteria and subjective success, whereas people with a higher focus on ego/goal orientation define their success in relation to others (Duda et al., 1991). The manifestation of these two orientations, in turn, influences the intensity of goals internalized by the individual, as specified in Karl-Dieter Opp's formulation of the Anomie Theory (Opp, 1974; Lamnek, 2021). The recent literature only suggests that a high task orientation should be positively correlated with general moral values, and high ego orientation should lead to inappropriate behavior (Kavussanu and Ntoumanis, 2003; Gonçalves et al., 2010). To date, only few other studies have examined the relationship between different achievement motivations and DB. Lucidi et al. (2017) did not find a significant correlation between task- or ego-orientation and the observed cheating in competitive tennis matches. Ring and Kavussanu (2018) used an experimental setting, where athletes could decide to illegitimately improve their race time to enhance their chances of winning. They reported a higher ego orientation in cheating individuals compared to honest ones. The operationalization and measurement of DB in these studies was based on the direct performance comparison with other individuals. Participants were only rewarded based on their performance relative to their opponents, such as winning a point in tennis or receiving a financial benefit for winning. This can impact the effect of achievement motivation. Hence, it is crucial to investigate whether the association between ego- or task-orientation and DB changes when the experimental tasks do not involve a direct performance comparison with other individuals and thus only self-referenced criteria for performance evaluation exist.

Since little is known about possible effects of other psychometric factors, explorative analyses of this study therefore also focus on the influence of Honesty-Humility (individuals with high scores avoid manipulating others for personal gain and feel little temptation to break the rules) and social desirability (tendency to conform to societal expectations) on DB, which has not received a lot of attention in previous research. It is proposed that:

H_5: *Lower levels of Honesty-Humility and higher levels of Social Desirability, Task- and Ego- Orientation will lead to a higher extent of DB.*

H_6: *Lower levels of Honesty-Humility and higher levels of Social Desirability, Task- and Ego-Orientation will lead to higher frequencies of DB.*

2 Materials and methods

2.1 Participants

A total of 65 students were tested. In terms of gender, the sample is almost balanced. It includes 31 (48%) men between the ages of 18 and 38 ($M = 22$, $SD = 3$) and 34 (52%) women between the ages of 18–31 ($M = 21$, $SD = 2$). All subjects were active in sports and engaged in either individual sports ($n = 48$; e.g., track and field, distance running, gymnastics, etc.) or team sports ($n = 17$; e.g., handball, volleyball, soccer, etc.). Participants had normal or corrected to normal (female: $n = 14$; male: $n = 8$) vision. Only one individual reported color blindness. Table 1 provides the age, sports activity, and psychometric measures for each gender group and for the entire sample.

All participants were recruited via self-selection from the participant pool of the Sport Science Institute at Saarland University, which mainly includes sport students and few psychology students. No specific inclusion or exclusion criteria were defined prior to the study. An e-mail with a short description of the study and a list of possible time slots was sent out 2 weeks before the 16-week testing period started. All testing sessions were conducted exclusively within the laboratory setting of the Sport Science Institute. Participants signed informed consent before the study began. To encourage active participation and to trigger DB, participants received different monetary rewards based on their performance in each task. The financial outcome ranged from 2.80 Euro to 9.01 Euro with a mean of 4.73 Euro ($SD = 0.97$). The study was approved by the Ethics Committee of Saarland University.

2.2 Measures and covariates

2.2.1 Difference spotting

2.2.1.1 Dishonest behavior

The "Difference Spotting Task" (DST) is a new cognitive measure designed to assess dishonest behavior at the item and individual level. It was introduced by Liu et al. (2021), and is based on the "unsolvable items" paradigm. The authors took several measures to minimize the extent of *honest mistakes*. The DST is a non-verbal task that does not rely on language or mathematical skills, making it applicable to a wide population (Liu et al., 2021). In this computer version of the task, participants were asked to identify the differences between two similar but not identical pictures (Figures 1A, B). Contrary to the instruction, only 40 of the 80 pairs are solvable. In order to maintain the credibility of the test, subjects were told that each pair of pictures was of varying difficulty. While some items would belong to the category labeled "easy" and therefore contain 10 differences, other pairs would

10.3389/fpsyg.2024.1297058

TABLE 1 Summary statistics by gender.

	Gender			Test statistics
	Male ($n = 30$)	Female ($n = 33$)	Total ($n = 63$)	
Age [years]				
M	22.4	21.39	21.87	$z = -1.919$; $p = 0.055$
SD	3.17	2.81	3	
MIN	18	18	18	
MAX	35	31	35	
Sport [min/wk]				
M	484.33	376.67	427.94	$t = -1.876$; $p = 0.066$
SD	261.74	182.51	228.42	
MIN	120	90	90	
MAX	1,440	780	1,440	
Task orientation				
M	3.9	4.19	4.05	$z = -1.129$; $p = 0.259$
SD	0.64	0.47	0.57	
MED	4	4	4	
MIN	2.43	3.43	2.43	
MAX	4.71	5	5	
Ego orientation				
M	3.47	2.91	3.18	$t = -2.670$; $\mathbf{p = 0.009^{**}}$
SD	0.81	0.84	0.86	
MED	3.5	2.83	3.33	
MIN	2	1.67	1.67	
MAX	5	4.5	5	
Social desirability				
M	10.73	12.18	11.49	$t = 1.984$; $p = 0.052$
SD	2.79	3	2.97	
MED	11	13	12	
MIN	4	6	4	
MAX	15	17	17	
Honesty humility				
M	3.47	3.7	3.59	$t = 1.682$; $p = 0.098$
SD	0.57	0.51	0.54	
MED	3.35	3.67	3.6	
MIN	2.6	2.7	2.6	
MAX	4.5	4.6	4.6	

Values for the test statistics and the corresponding p-values are derived from two sample Welch's t-tests for sport [min/wk], ego-orientation, social desirability and honesty humility and from two sample Wilcoxon tests for age [years] and task-orientation. Significant values are highlighted in bold for visual emphasis. $^{*}p < 0.05$; $^{**}p < 0.01$.

be categorized as "medium" with six differences, and finally the category "hard" would consist of images with only one difference (Figures 1C–E).

During the DST itself, participants only had to indicate whether they found a difference ("✓ Yes") or not ("χ No"). There was no need to mark or point out the differences they found. Participants were instructed to double-check any differences they found and only select "yes" if they were certain. Figure 2 shows the timeline for a single trial. Due to the high cognitive demands of this task and to further minimize the occurrence of *honest mistakes*, it was decided

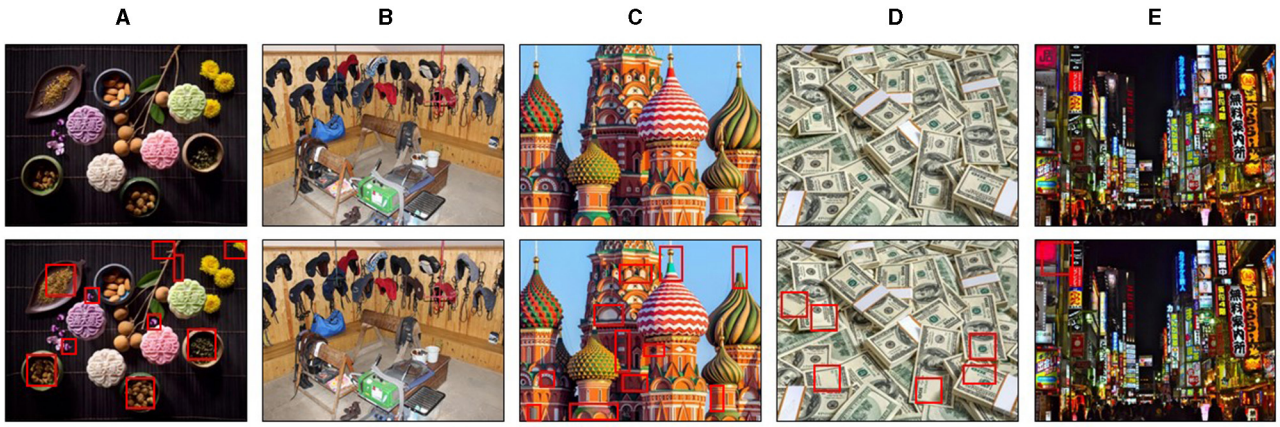


FIGURE 1
Examples of the visual stimuli used in this study. **(A)** Example of an original stimulus pair in "solvable items," belonging to the category "easy." **(B)** Example of an original stimulus pair in "unsolvable items," containing no differences. Participants were instructed that there would be two additional difficulty levels besides **(C)** "easy," namely **(D)** "medium" with six differences, and **(E)** "hard" with one difference. Note, however, that the instructions differed from the actual stimulus pairs. Differences between the target stimuli are highlighted by red boxes for illustration purposes (Adapted from Liu et al., 2021).

to include a standardized break of 60 s after 40 trials. The DB can be measured as the sum of claimed-to-be-solved pairs within the 40 unsolvable items. Participants received 3 cents/solved pair in this task.

2.2.1.2 Visual search ability

In this second computer task, participants were asked to not only report whether they found a difference or not, but also to actually mark the spotted differences. Starting again with a fixation screen for 1 s, each of the following total 10 trials lasted 30 s and consisted of a pair of pictures with exactly 10 differences. Remaining time was always shown on the same screen. Each trial ended with a specific and untimed transition screen that indicated the end of the trial. Participants could individually choose when to start the next trial. The overall score was presented on the last screen of this assessment. The instruction was to mark as many differences as possible. The participants could set a maximum of 10 different markers for this task. The correctness of the placed markers was standardized by programming areas around the actual differences. Care was taken to adjust the areas to the respective sizes of the differences. This ensured the objectivity of the evaluation. Individuals had no opportunity to engage in dishonest behavior in this task. As a measure for performance, the total sum of spotted differences across all 10 trials was used. Participants received 2 cents for each difference marked in this task.

2.2.2 Motor performance

2.2.2.1 Coordinative throwing

The experimental set-up consisted of a bucket (diameter = 28 cm; height = 32 cm) that was placed on the floor as a target. Participants were asked to stand behind a chair 3 m from the target. The main objective was to score as many hits as possible in five blocks of 10 throws each. A throw was counted as a hit if the ball (soft ball with 6 cm in diameter) touched the bottom of the bucket. Rim shots should not be registered as successful hits. To minimize the occurrence of *honest mistakes*, only 10 balls were available for throwing, and the target was designed so that successful hits remained in the bucket. This way, participants could easily recount their successful hits. They were asked to write down their performances via self-disclosure after each of the five blocks and received 5 cents for each successful hit.

2.2.2.2 Isometric strength task

A bar was placed 2.40 m above the floor (distance to the wall = 40 cm). Participants were instructed to pull themselves up to the chin-up position, starting from a box (height = 40 cm). The main objective was to hold the chin-up position, with their head held over the bar, for as long as possible. Only one trial was used in this scenario because of muscle fatigue. Concerning the posture and position of their hands, individuals were free to grab the bar however they preferred. A laptop facing the participants and displaying a running timer, that was programmed to start at zero after a countdown of 20 s expired, was placed on a chair ∼3 m away from them so that they could accurately measure their own performance. They were instructed to report the time when they left the chin-up position. Participant could earn 3 cents for every second in the target position.

2.2.3 Questionnaires

2.2.3.1 Achievement goals

The achievement goals of participants were assessed using the reliable and validated German version of the Task and Ego Orientation in Sport Questionnaire (TEOSQ-D), which was developed by Rethorst and Wehrmann (1998). The questionnaire starts with a common stem for each item ("I feel most successful in sport when …") and is followed by 13 items measuring task (seven items) and ego orientation (six items) on five-point Likert

FIGURE 2
Sequence of events in a single trial in the DST, starting with fixation (1 s) and followed by a pair of pictures for 8 s. The subsequent "Report"-Screen was not timed. Based on the chosen answer ("Yes" or "No") the corresponding outcome screen was shown (1 s). This trial shows that a participant answered "Yes" in a solvable item and therefore gained 3 cents (Adapted from Liu et al., 2021).

scales ranging from strongly disagree (1) to strongly agree (5). The evaluation is done separately for the two subscales by determining the mean value. Higher scores on each subscale represent greater achievement goals.

2.2.3.2 Honesty-humility

To get a measure for honesty, part of the German version of the HEXACO personality inventory was used (Ashton et al., 2014). The scale consists of the dimensions Honest-Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O). We only used the subscale of Honesty-Humility, because it is the only subscale for which a relationship with DB had been shown prior to the current study (Hershfield et al., 2012). It states that persons with a high score avoid manipulating others for personal gain and feel little temptation to break the rules. This subscale consists of 16-items that are answered on five-point Likert scales ranging from strongly disagree (1) to strongly agree (5).

2.2.3.3 Social desirability

Social desirability was assessed by using the modified German version of the "Social Desirability Scale" originally published by Crowne and Marlowe (1960). The scale consists of 17 items with the response options "true" (1) and "false" (0). It has been shown to be a valid and reliable assessment (Stöber, 1999). Higher scores represent a greater level of social desirability.

2.3 Data collection

In the experiment, participants were informed that data would be anonymized and treated confidentially. Test sessions lasted ~60 min each and were conducted in an individual setting with only the experimenter and the participant being present. Each session started with subjects completing computer-based questionnaires providing information about gender, age, visual aid, sporting activity, achievement goals, Honesty-Humility and Social-Desirability. Thereafter participants proceeded to complete the DST and skill task on the same computer, where they received written instructions. Throughout these first two assessments, the experimenter remained in the same room, though not directly visible to the subjects. The experimenter was not able to see the computer screen of the participants. For the subsequent two tests (coordinative throwing and isometric strength), participants were informed that this phase of the experiment aimed to examine the influence of spectator effects on motor performance. However, as there were no spectators, each individual was told they were in the "*alone*" condition, where no one, including the experimenter, was present. This means that, after reading the standardized instructions to them, the experimenter exited the room, and participants were left alone to complete the task. A hidden camera was placed on target to measure the actual performance in these tasks. As a measure for DB the difference between the self-reported and the actual performance was used. A research assistant who did not know any of the students and is also not involved in teaching them evaluated the videos for both, the coordinative throwing task and the isometric strength task. As the study adopted a within-subjects design, each participant completed every task.

2.4 Statistics

The statistical analysis was conducted using R Statistical Software for Windows (R Core Team, 2022). Whether DB occurs for each of the tasks was tested using one sample t-test or equivalent non-parametric alternatives, by comparing the empirical values against 0. A linear mixed effects model, with participant as a random factor, and task as a within factor, was used to predict the influence of gender, Honesty-Humility, Social Desirability, Task- and Ego-Orientation on DB across all three z-standardized tasks. To predict the occurrence of DB, a logistic mixed effects model, with participant as a random factor, and task as a within factor, was performed using the same personal and psychometric variables. To assess whether the participants show intrapersonal variability or stability in DB, a new variable was derived from the data. For each individual, the sum of squared differences from their respective individual mean across the three standardized variables was computed, followed by a division by 3. Individuals whose resulting value approaches zero tend to demonstrate a higher degree of stability in their behavior. Conversely, higher values indicate a greater magnitude of intrapersonal variability. Intrapersonal variability of DB was tested using non-parametric one sample Wilcox test, by comparing the empirical values against 0.219, which would represent a difference in means with a small effect. This threshold was determined by using the formula for Cohen's d, substituting the respective values of d, s, μ_1 and then solving for μ_2 (Cohen, 1988). The mixed effects models

were conducted with the nlme R package (Pinheiro et al., 2022). Descriptive statistics and Cronbach's α were calculated via the psych R package (Revelle, 2022). Effect sizes were computed by using the rcompanion R package (Mangiafico, 2023). For all analyses the alpha level was set to 0.05. Two participants were excluded from all analyses due to instruction non-compliance.

3 Results

3.1 General results: is dishonest behavior present in the three tasks?

In the DST 59% of participants ($n = 37$) reported finding a difference for at least one out of 40 unsolvable items, whereas only 14% ($n = 9$) claimed to have solved all 40 solvable pictures. Additionally, the performance, i.e., the amount of solvable and unsolvable items claimed to be solved by the participants, is shown in Table 2. Individuals reported solving 10% ($SD = 15.99$; $CV = 159\%$) of unsolvable items on average, which is significantly more than 0% (Wilcoxon signed rank test, $z = -5.428$, $p < 0.001$, $r = 0.873$, representing a large effect). Reliability analysis revealed an excellent internal consistency ($\alpha = 0.94$). Opposite to the findings of Liu et al. (2021) no significant relation between the performance in solvable and unsolvable pictures could be observed using spearman's rank correlation, $rho = 0.016$, $p = 0.903$. The analysis of the *skill task* also revealed that there is no significant difference between honest and dishonest individuals in the amount of differences they are able to spot [Welch two sample t-test, $t_{(60.926)} = 0.139$, $p = 0.889$]. This is in line with the results obtained in the linear model, where the extent of DB in the DST was predicted by the performance in the skill task. The model only explains a statistically non-significant and very weak proportion of variance, $R^2 < 0.001$, $F_{(1,61)} = 0.001$, $p = 0.986$.

In the "*Throwing Task*" 49% of participants ($n = 31$) over reported their performance by at least 1 successful hit, ranging from 1 to 20 hits ($M = 3.35$; $SD = 3.96$; $CV = 118\%$). Across all participants, we detected DB which is significantly larger than 0 (Wilcoxon signed rank test, $z = -5.026$, $p < 0.001$, $r = 0.88$, representing a large effect).

In the "*Strength Task*" 56% of participants ($n = 35$) over reported their performance by at least 1 s, ranging from 1 to 17 s ($M = 4$; $SD = 4.46$; $CV = 103\%$). Across all participants, we detected DB which is significantly larger than 0 (Wilcoxon signed rank test, $z = -5.316$, $p < 0.001$, $r = 0.879$, representing a large effect).

3.2 Factors influencing the extent of dishonest behavior

We fitted a linear mixed effects model (estimated using maximum log-likelihood) to predict the extent of z-standardized DB scores with the within-subject factor task. The model included the identification variable ("Participant") as a random effect. Its total explanatory power is moderate (conditional $R^2 = 0.24$) and the part related to the fixed effects alone is small, $R^2 = 0.07$. Within this model the effect of social desirability is statistically significant and positive [$\beta = 0.071$; 95% CI [0.01, 0.13], $t_{(125)} = 2.4$, $p = 0.018$], indicating that a higher amount of social desirability leads to a higher extent in z-standardized cheating scores. The fixed effects of gender, honesty-humility, task- and ego-orientation failed to reach significance (see Table 3). During the assessment of assumptions, it was ascertained that linearity might be problematic within the framework of this model (see Supplementary material). The model was subsequently examined with non-linear components, yielding no conclusive evidence of a non-linear relationship for the Social Desirability variable. As a result, the linear effects reported below are presented and will be discussed later.

3.3 Factors influencing the occurrence of dishonest behavior

We fitted a logistic mixed effects model (estimated using maximum log-likelihood and Nelder-Mead optimizer) to predict the occurrence of DB with the within-subject factor task. The model included the identification variable ("Participant") as a random effect. Its total explanatory power is small (conditional $R^2 = 0.11$) and the part related to the fixed effects alone is also small, $R^2 = 0.09$. Within this model the effect of task orientation is statistically significant and positive [$\beta = 0.834$, 95% CI [0.20, 1.47], $z = 2.097$, $p = 0.010$]. By analyzing the odds ratios, it can be observed that a one-unit increase in Task Orientation is associated with a 2.3-fold higher probability of showing DB. The fixed effect for gender, honesty-humility, ego orientation, and social desirability failed to reach significance (see Table 4).

3.4 Intrapersonal stability

Combining all three tasks where DB could be measured, a total of eight individuals (13%; men: $n = 4$; women: $n = 4$) remained completely honest, 28 (44%; men: $n = 11$; women: $n = 17$) showed DB in exactly one task, 17 (27%; men: $n = 9$; women: $n = 8$) were dishonest in two of the three tasks, and 10 participants (16%; men: $n = 6$; women: $n = 4$) over reported their performance in every single task. These frequencies are not significantly different between men and women (chi-squared test, $\chi^2 = 1.605$, $p = 0.658$, $\phi_c = 0.159$). While some information about the tendency for stability or variability of DB can be drawn from the frequencies listed above, an additional inferential approach is necessary to analyze the extent. Individuals reached a mean of 0.501 ($SD = 1.097$; CV = 219%) in intrapersonal variability, which is not significantly >0.219 (Wilcoxon signed rank test, $z = -3.379$, $p = 0.705$, $r = -0.083$, representing a weak effect), indicating that the extent of DB is stable across tasks.

4 Discussion

This experiment was designed to repeatedly measure DB on the individual level across two different motor and one cognitive task. Its goal was to investigate the intrapersonal stability of DB, and to further identify influencing factors. The study design allows for a direct assessment of DB for each individual, without calculating probabilities and comparing them to an expected distribution of

TABLE 2 Number of reported differences for each task by gender and in total.

	Gender			Test statistics
	Male ($n = 30$)	Female ($n = 33$)	Total ($n = 63$)	
DST—solvable				
M	37.5	37.52	37.51	$z = -0.622; p = 0.839$
SD	1.94	1.75	1.83	
MED	38	38	38	
MIN	33	32	32	
MAX	40	40	40	
DST—unsolvable				
M	3.3	4.67	4.02	$z = -0.203; p = 0.534$
SD	5.21	7.33	6.4	
MED	1	2	1	
MIN	0	0	0	
MAX	21	28	28	
Skill task				
M	52.43	50.3	51.32	$t = -0.936; p = 0.353$
SD	8.08	9.95	9.1	
MED	51.5	51	51	
MIN	31	21	21	
MAX	69	65	69	

Values for the test statistics and the corresponding p-values are derived from a two sample Welch's t-test for the Skill-Task of spotting and marking differences and from two sample Wilcoxon tests for solvable and unsolvable blocks of the DST.

TABLE 3 Results of the linear mixed effects model showing a significant influence of social desirability on the extent of dishonest behavior.

Effect	Estimate	SE	95% CI		*t*	*p*
			LL	UL		
Gender	0.217	0.185	−0.15	0.58	1.174	0.245
Social desirability	0.071	0.030	0.01	0.13	2.401	**0.018***
Ego orientation	−0.005	0.108	−0.22	0.21	−0.047	0.963
Task orientation	0.239	0.163	−0.08	0.56	1.472	0.144
Honesty humility	−0.099	0.160	−0.41	0.22	−0.619	0.539

Significant values are highlighted in bold for visual emphasis. $^{*}p < 0.05$; $^{**}p < 0.01$.

a true random event (as in die-roll or coin-flip tasks). Therefore, to our knowledge, this experimental design may be the first to allow inferences from self-reported personality traits to the extent of observed DB measured in different tasks. The detailed measurement of DB additionally makes it possible to not only categorize participants into honest and dishonest individuals, but also to determine the exact extent of dishonesty.

4.1 Gender

Neither the proportion of participants showing DB, nor the extent of DB is significantly different between men and women in the models we calculated. Our hypothesis must therefore be rejected. These results align with the empirical studies, which also found no gender-related differences (Aoki et al., 2010; Childs, 2012; Pascual-Ezama et al., 2015; Ezquerra et al., 2018). This might be explained with the observations of Chowdhury et al. (2021) who propose vanishing gender differences when pre-planning of dishonest actions becomes possible. Participants in their study were aware of the two tasks and could pre-plan their behavior, or they learned about the individual task in each stage and were not able to plan accordingly. While the exact definition of pre-planning remains unclear, we argue that participants in our study were also instructed beforehand and therefore had a chance to pre-plan their behavior. This might explain the non-significant difference in the occurrence of DB in both men and women.

In conclusion, reference will once again be made to Opp's specification of the Anomie Theory. Since no gender differences were found, it can be assumed that either one or a combination of the "*intensity of internalized goals*" and the "*intensity of legitimate and illegitimate means*" is similarly manifested for both men

TABLE 4 Results of the logistic mixed effects model showing a significant influence of Task-Orientation on the occurrence of dishonest behavior.

Effect	Estimate	SE	*z*-value	*p*	OR	95% CI	
						LL	UL
Gender	0.431	0.348	1.238	0.216	1.539	0.778	3.047
Social desirability	0.097	0.058	1.674	0.094	1.102	0.983	1.236
Ego orientation	0.011	0.204	0.056	0.955	1.012	0.678	1.510
Task orientation	0.834	0.322	2.590	**0.010***	2.303	1.225	4.329
Honesty humility	−0.114	0.302	−0.376	0.707	0.892	0.493	1.614

Significant values are highlighted in bold for visual emphasis. $^{*}p < 0.05$; $^{**}p < 0.01$.

and women across all three tasks. The assumed variability in participants' self-concept does not appear to exert a significant enough influence on the intensity of these objectives to provoke gender differences in DB to a substantial degree.

4.2 The influence of psychometric factors

4.2.1 Social desirability

The mixed model analysis indicates that higher social desirability leads to more extensive DB. As the extent of DB has not been previously linked to psychometric variables, the results reported here should be regarded as novel exploratory findings that require validation in future research. However, the analysis of the logistic model examining the occurrence of DB fails to strengthen these findings. A greater amount of social desirability does not translate into a higher likelihood of showing DB.

4.2.2 Task orientation

The logistic mixed model analysis indicates a significant relationship between task orientation and the occurrence of dishonest behavior. Individuals with a stronger inclination toward task orientation demonstrate DB with a notably heightened likelihood. This complements both the theoretical assumptions of Kavussanu and Ntoumanis (2003) and Gonçalves et al. (2010). However, the empirical findings of Ring and Kavussanu (2018) only report a significant influence of ego orientation on DB, while task orientation had no impact. The reason for these divergent results may lie in the employed task. In the investigation by Ring and Kavussanu (2018), subjects undertook a competitive task that entailed a direct performance comparison with others within the experimental setting. As a result, the extent of the reward was intricately tied to this competitive context. In our study however, no opportunity for a performance comparison between individuals was possible. The financial reward solely depended on individual performance. In Ring and Kavussanu (2018) study, the task consisted of outperforming other participants, while our approach made participants' pursue self-referenced performance criteria. Consequently, it is plausible that in the tasks utilized in our study, DB was shown solely from individuals with higher levels of task orientation. Due to the absence of a direct performance comparison and the subsequent lack of an externally referenced definition of success, individuals with higher Ego Orientation were maybe not prompted enough to engage in DB. It seems that in line with the theoretical assumptions of the Anomie Theory by Opp, the intensity of goals internalized by the individual and consequently the likelihood to engage in DB are influenced differently by the manifestations of ego and task orientations.

4.2.3 Honesty humility

The study conducted here presents a novel approach in this realm of research. As such it cannot be definitively ascertained why a significant impact of the psychometric variable Honesty-Humility on the extent or occurrence of DB could not be observed. In accordance with the construct definition of this particular subscale, an aspect to be measured is the propensity for "temptation to break the rules." However, honest and dishonest participants do not differ in the manifestation of this subscale. Nevertheless, it is plausible that the presence of socially desirable response tendencies could exert an influence on the applicability of the scale to real-world contexts.

4.3 Intrapersonal stability

By analyzing the frequency of DB (i.e., categorization of whether participants were honest or dishonest), the experimental design employed in this study provides empirical evidence for the validation of the typologies introduced within the theoretical framework of the self-licensing theory. Those who showed intrapersonal stability remained completely honest (ethical type), or were dishonest in every single task (economical type). Such behavior can be referred to as Behavioral Spillover (Chowdhury et al., 2021). It describes consistent behavior across repeated decision-making scenarios, implying that an individual who behaves honestly (dishonestly) should continue such actions in recurring opportunities (Chowdhury et al., 2021). However, this behavioral pattern cannot be generalized to all participants. The vast majority of participants changed their behavior at least once between the tasks and can be categorized as the mixed type with a finite positive intrinsic cost of DB. By obeying the rules in one task, participants with intrapersonal variability in DB earn moral credit that reduces the discomfort of performing dishonestly afterwards (moral licensing; Clot et al., 2014; Chowdhury et al., 2021). However, actions can also be oriented in the opposite direction. The moral self-worth of individuals can be restored through moral actions that can balance their inner moral account.

The subsequent inferential statistical analysis of the extent of DB (i.e., the exact difference between the self-reported and actual observed outcome) revealed that participants show intrapersonal behavioral stability. The variable computed using an index does not exhibit a significant increase beyond the mean difference indicative of a small effect. This constitutes a novel finding concerning the extent of DB, which is situated within the theoretical paradigms of Opp's Anomie Theory (Opp, 1974), the self-licensing theory, and the concept of Behavioral Spillover. By recognizing that the level of dishonest behavior remains consistent across participants, we can draw conclusions about expected behavior. For example, if individuals consistently misreport whether a tennis ball touched the line, resulting in a loss of points, it suggests a likelihood of similar behavior in the future. This principle can be extended to broader contexts, such as doping, dishonesty in academic settings, and organizational environments. Once such dishonest individuals are identified, targeted interventions can be implemented to reinforce factors that promote honesty, such as the perceived "*intensity of legitimate norms*" and the perceived "*degree of legitimate means and opportunities*" from Opp's anomie theory. Future studies should try to repeatedly measure DB across more similar tasks, in order to prove if the task itself has an influence on intrapersonal stability of dishonesty.

4.4 Limitations

4.4.1 Limitations concerning the lack of a gender effect

A possible reason discussed in empirical studies of gender differences in dishonesty is the presence of country- and cultural specific norms (Childs, 2012; Rosenbaum et al., 2014). For example, there might be less of a difference between male and female German sport students than between Australian men and women (Friesen and Gangadharan, 2012). Norms and moral values vary across cultures due to their acquisition within distinct social environments. According to the 6-D model of national culture, societies differ in six dimensions: Individualism; Power Distance; Masculinity; Uncertainty Avoidance; Long-term Orientation; and Indulgence (Hofstede et al., 2010). Therefore, categorizations of dishonesty and conformity could vary across different cultures and introduce social biases into these studies. Given that our study did not explore cultural dimensions, we cannot draw any firm conclusions, and we suggest to include cultural differences in future studies on DB. While Fischbacher and Föllmi-Heusi (2013) argue that cheating outcomes remain the same even when the stakes are tripled or the anonymity is altered, Muñoz García et al. (2021) show that gender differences in DB are influenced by the reward factor. Women are more satisfied with lower rewards and would therefore need higher rewards to trigger DB (Muñoz García et al., 2021). Given the absence of a gender difference in DB, it can be argued that rewards were high enough to trigger dishonesty in both men and women in our sample. Given that the financial payoff was based on the original study by Liu et al. (2021), future studies should aim to determine the threshold at which women's DB is triggered.

Grosch and Rau (2017) mention that prosocial individuals are most honest and that the highest percentage of these subjects can be found among women. Another plausible explanation for the lack of significant gender differences could stem from variations in the expression of prosociality. Male participants within the study's sample might exhibit a heightened degree of social value orientation, or female participants might display a lower degree compared to the general population. Future studies should aim to determine if there are different thresholds at which men's DB and women's DB are triggered.

Given the variety of different experimental tasks and methodological differences between the studies, we suggest that the influence of gender on DB may be more complex than previously assumed. We argue that the differences in methodology and the operationalization of DB are the key reasons for inconsistent results.

4.4.2 Limitations concerning intrapersonal stability of dishonest behavior

A factor contributing to the intrapersonal variability of behavior can be highlighted within the context of Opp's Anomie Theory (Opp, 1974). It is plausible that among certain participants, the intensity of goals internalized may vary from task to task, consequently inducing or inhibiting DB accordingly. While it remains unclear why the tasks trigger DB differently, it should be noted that some participants might not value one of those tasks equally to the others. In other words, motivations for participation, success and DB may vary from task to task. The employed experimental design did not yield quantitative data that could directly quantify or characterize the "intensity of goals internalized by the individual." Future studies should try to operationalize this variable throughout different tasks, for example by asking participants before working on a task how motivated they are to solve it, or how much they like this type of tasks in general.

4.4.3 General limitations

It is possible that the experimenter could exert an influence on participants' DB through impression management biases. It remains questionable to compare results of DB across samples with a high degree of variability without taking the additional factors mentioned above into account. While the extent and occurrence of DB might not be different, it is still possible that men and women may differ in subtler aspects like type of incentive to induce dishonesty (Childs, 2012).

Furthermore, this study solely examined whether dishonest behavior can be induced among participants through the provision of material rewards. It is important to note that the monetary compensation might hold diverse implications for individuals as well. Although our experimental design minimizes the problem of honest mistakes (Heyman et al., 2020; Liu et al., 2021) we cannot exclude the possibility that participants occasionally perceived a difference (in the DST) where there was none. Similarly, they may have miscounted the successful hits in the throwing task without intending to cheat.

Additionally, the high specificity of the sample should be acknowledged. Given that the participants primarily consist of sports students, the generalizability of the findings to the broader population is questionable.

5 Conclusion

In conclusion, the present study has provided valuable insights into the influencing factors and intrapersonal stability of DB. While both males and females show DB in all three tasks, no difference in the frequency or the extent could be observed between them. The extent of DB is stable across individuals and it is further influenced by social desirability. Task orientated subjects show a higher likelihood of the mere occurrence of DB. These findings make significant contributions to our understanding of the potential determinants of DB and illuminate the application of Opp's Anomie Theory. They reveal that dishonest behavior is not solely driven by the desire to maximize certain outcomes but is also influenced by other factors, such as the "*intensity of goals internalized by the individual*" and the "*intensity of illegitimate norms*." Additionally, experimentally proving the existence of the "*ethical*," "*mixed*," and "*economic types*" could further strengthen the self-licensing theory.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Ethics Committee for Empirical Human Sciences of Saarland University. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

KL: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. CK: Conceptualization, Methodology, Writing – review & editing. SS: Conceptualization, Methodology, Project administration, Writing – review & editing.

Funding

The author(s) declare that financial support was received for the research, authorship, and/or publication of this article. This research was funded by Saarland University.

Conflict of interest

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

Publisher's note

Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2024.1297058/full#supplementary-material

References

Abeler, J., Nosenzo, D., and Raymond, C. (2019). Preferences for truth-telling. *ECTA* 87, 1115–1153. doi: 10.3982/ECTA14673

Aoki, K., Akai, K., and Onoshiro, K. (2010). Deception and confession: experimental evidence from a deception game in Japan. *Osaka University Discussion Paper No. 786*. Available online at: http://ssrn.com/abstract=1677773.

Ashton, M. C., Lee, K., and de Vries, R. E. (2014). The HEXACO Honesty-Humility, Agreeableness, and Emotionality factors: a review of research and theory. *Pers. Soc. Psychol. Rev.* 18, 139–152. doi: 10.1177/1088868314523838

Becker, G. S. (1968). Crime and punishment: an economic approach. *J. Polit. Econ.* 76, 169–217. doi: 10.1086/259394

Blume, A., DeJong, D. V., Neumann, G. R., and Savin, N. E. (2002). Learning and communication in sender-receiver games: an econometric investigation. *J. Appl. Econometr.* 17, 225–247. doi: 10.1002/jae.647

Burgoon, J. K., and Buller, D. B. (1994). Interpersonal deception: III. Effects of deceit on perceived communication and nonverbal behavior dynamics. *J. Nonverb. Behav.* 18, 155–184. doi: 10.1007/BF02170076

Burgoon, J. K., Stoner, G. A., Bonito, J. A., and Dunbar, N. E. (2003). "Trust and deception in mediated communication," in *36th Annual Hawaii International Conference on System Sciences, 2003*. Big Island, HI: IEEE.

Capraro, V. (2018). Gender differences in lying in sender-receiver games: a meta-analysis. *Judgm. Decis. Mak.* 13, 345–355. doi: 10.1017/S1930297500009220

Childs, J. (2012). Gender differences in lying. *Econ. Lett.* 114, 147–149. doi: 10.1016/j.econlet.2011.10.006

Chowdhury, S. M., Jeon, J. Y., Kim, C., and Kim, S.-H. (2021). Gender differences in repeated dishonest behavior: experimental evidence. *Games* 12:44. doi: 10.3390/g12020044

Christiansen, A. V., Frenger, M., Chirico, A., and Pitsch, W. (2023). Recreational athletes' use of performance-enhancing substances: results from the First European Randomized Response Technique Survey. Sports Med. *Open* 9:1. doi: 10.1186/s40798-022-00548-2

Clot, S., Grolleau, G., and Ibanez, L. (2014). Smug alert! Exploring self-licensing behavior in a cheating game. *Econ. Lett.* 123, 191–194. doi: 10.1016/j.econlet.2014.01.039

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences, 2 Edn*. Hillsdale, NJ: Erlbaum.

Crowne, D. P., and Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *J. Consult. Psychol.* 24, 349–354. doi: 10.1037/h0047358

DePaulo, B. M., Kashy, D. A., Kirkendol, S. E., Wyer, M. M., and Epstein, J. A. (1996). Lying in everyday life. *J. Pers. Soc. Psychol.* 70, 979–995. doi: 10.1037/0022-3514.70.5.979

Dreber, A., and Johannesson, M. (2008). Gender differences in deception. *Econ. Lett.* 99, 197–199. doi: 10.1016/j.econlet.2007.06.027

Duda, J. L., Olson, L. K., and Templin, T. J. (1991). The relationship of task and ego orientation to sportsmanship attitudes and the perceived legitimacy of injurious acts. *Res. Q. Exerc. Sport*. 62, 79–87. doi: 10.1080/02701367.1991.10607522

Ezquerra, L., Kolev, G. I., and Rodriguez-Lara, I. (2018). Gender differences in cheating: loss vs. gain framing. *Econ. Lett.* 163, 46–49. doi: 10.1016/j.econlet.2017.11.016

Fischbacher, U., and Föllmi-Heusi, F. (2013). Lies in disguise—an experimental study on cheating. *J. Eur. Econ. Assoc.* 11, 525–547. doi: 10.1111/jeea.12014

Frenger, M., and Pitsch, W. (2021). "Abweichendes verhalten im sport," in *Sport in Kultur und Gesellschaft*, eds A. Güllich and M. Krüger (Berlin, Heidelberg: Springer Spektrum), 217–236.

Friesen, L., and Gangadharan, L. (2012). Individual level evidence of dishonesty and the gender effect. *Econ. Lett.* 117, 624–626. doi: 10.1016/j.econlet.2012.08.005

Gerlach, P., Teodorescu, K., and Hertwig, R. (2019). The truth about lies: a meta-analysis on dishonest behavior. *Psychol. Bull.* 145, 1–44. doi: 10.1037/bul0000174

Gleaves, J., Petróczi, A., Folkerts, D., Hon, O., de Macedo, E., Saugy, M., et al. (2021). Doping prevalence in competitive sport: evidence synthesis with "best practice" recommendations and reporting guidelines from the WADA Working Group on Doping Prevalence. *Sports Med.* 51, 1909–1934. doi: 10.1007/s40279-021-01477-y

Gonçalves, C. E., Coelho e Silva, M. J., Cruz, J., Torregrosa, M., and Cumming, S. (2010). The effect of achievement goals on moral attitudes in young athletes. *J. Sports Sci. Med.* 9, 605–611.

Grosch, K., and Rau, H. A. (2017). Gender differences in honesty: the role of social value orientation. *J. Econ. Psychol.* 62, 258–267. doi: 10.1016/j.joep.2017.07.008

Grym, J., and Liljander, V. (2016). To cheat or not to cheat? The effect of a moral reminder on cheating. *Nord. J. Bus.* 65, 18–37.

Gylfason, H. F., Arnardottir, A. A., and Kristinsson, K. (2013). More on gender differences in lying. *Econ. Lett.* 119, 94–96. doi: 10.1016/j.econlet.2013.01.027

Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., et al. (2001). In search of homo economicus: behavioral experiments in 15 small-scale societies. *Am. Econ. Rev.* 91, 73–78. doi: 10.1257/aer.91.2.73

Hershfield, H. E., Cohen, T. R., and Thompson, L. (2012). Short horizons and tempting situations: lack of continuity to our future selves leads to unethical decision making and behavior. *Organ. Behav. Hum. Decis. Process.* 117, 298–310. doi: 10.1016/j.obhdp.2011.11.002

Heyman, T., Vankrunkelsven, H., Voorspoels, W., White, A., Storms, G., and Verheyen, S. (2020). When cheating is an honest mistake: a critical evaluation of the matrix task as a measure of dishonesty. *Collabra* 6:294. doi: 10.1525/collabra.294

Hodgkinson, T., Curtis, H., MacAlister, D., and Farrell, G. (2016). Student academic dishonesty: the potential for situational prevention. *J. Crim. Justice Educ.* 27, 1–18. doi: 10.1080/10511253.2015.1064982

Hofstede, G., Hofstede, G. J., and Minkov, M. (2010). *Culture and Organizations. Software of the Mind*. New York, NY: Mc Graw Hill.

Jacobsen, C., Fosgaard, T. R., and Pascual-Ezama, D. (2018). Why do we lie? A practical guide to the dishonesty literature. *J. Econ. Surv.* 32, 357–387. doi: 10.1111/joes.12204

Kajackaite, A., and Gneezy, U. (2017). Incentives and cheating. *Games Econ. Behav.* 102, 433–444. doi: 10.1016/j.geb.2017.01.015

Kavussanu, M., and Ntoumanis, N. (2003). Participation in sport and moral functioning: does ego orientation mediate their relationship? *J. Sport Exerc. Psychol.* 25, 501–518. doi: 10.1123/jsep.25.4.501

Kennedy, J. A., and Kray, L. J. (2022). Gender similarities and differences in dishonesty. *Curr. Opin. Psychol.* 48:101461. doi: 10.1016/j.copsyc.2022.101461

Kindsiko, E., Vadi, M., and Vissak, T. (2013). "From dishonesty to honesty: is this journey path dependent?," in *(Dis) Honesty in Management*, eds T. Vissak and M. Vadi (Leeds: Emerald Group Publishing Limited), 337–349.

LaDuke, R. D. (2013). Academic dishonesty today, unethical practices tomorrow? *J. Prof. Nurs.* 29, 402–406. doi: 10.1016/j.profnurs.2012.10.009

Lamnek, S. (2021). *Theorien abweichenden Verhaltens I—"Klassische Ansätze". 11., durchgesehene Auflage*. Paderborn: Brill Fink.

Liu, J., Shen, Q., Zhang, J., Beyens, U., Cai, W., Decety, J., et al. (2021). The difference spotting task: a new nonverbal measure of cheating behavior. *Behav. Res.* 53, 1935–1944. doi: 10.3758/s13428-020-01526-w

Loewen, P. J., Dawes, C. T., Mazar, N., Johannesson, M., Koellinger, P., and Magnusson, P. K. (2013). The heritability of moral standards for everyday dishonesty. *J. Econ. Behav. Organ.* 93, 363–366. doi: 10.1016/j.jebo.2013.05.001

Lohse, T., and Qari, S. (2014). Gender differences in deception behaviour—the role of the counterpart. *Appl. Econ. Lett.* 21, 702–705. doi: 10.1080/13504851.2013.848020

Lohse, T., and Qari, S. (2021). Gender differences in face-to-face deceptive behavior. *J. Econ. Behav. Organ.* 187, 1–15. doi: 10.1016/j.jebo.2021.03.026

Lucidi, F., Zelli, A., Mallia, L., Nicolais, G., Lazuras, L., and Hagger, M. S. (2017). Moral attitudes predict cheating and gamesmanship behaviors among competitive tennis players. *Front. Psychol.* 8:571. doi: 10.3389/fpsyg.2017.00571

Mangiafico, S. S. (2023). *Rcompanion: Functions to Support Extension Education Program Evaluation*. New Brunswick, NJ: Rutgers Cooperative Extension.

Mazar, N., Amir, O., and Ariely, D. (2008). The dishonesty of honest people: a theory of self-concept maintenance. *J. Mark. Res.* 45, 633–644. doi: 10.1509/jmkr.45.6.633

Muñoz García, A., Gil-Gómez de Liaño, B., and Pascual-Ezama, D. (2021). Gender differences in individual dishonesty profiles. *Front. Psychol.* 12:728115. doi: 10.3389/fpsyg.2021.728115

Nicholls, J. G. (1989). *The Competitive Ethos and Democratic Education*. Cambridge, MA: Harvard University Press.

Opp, K. D. (1968). *Kriminalität und Gesellschaftsstruktur. Eine kritische Analyse soziologischer Theorien abweichenden Verhaltens*. Darmstad; Berlin: Hermann Luchterhand.

Opp, K. D. (1974). *Abweichendes Verhalten und Gesellschaftsstruktur*. Darmstadt: Hermann Luchterhand.

Pascual-Ezama, D., Fosgaard, T. R., Cardenas, J. C., Kujal, P., Veszteg, R., Gil-Gómez de Liaño, B., et al. (2015). Context-dependent cheating: experimental evidence from 16 countries. *J. Econ. Behav. Organ.* 116, 379–386. doi: 10.1016/j.jebo.2015.04.020

Pinheiro, J., Bates, D., and R Core Team. (2022). *nlme: Linear and Nonlinear Mixed Effects Models*. R package version 3.1–164.

R Core Team (2022). *R: A Language and Environment for Statistical Computing*. Vienna: R Foundation for Statistical Computing.

Rethorst, S., and Wehrmann, R. (1998). "Der TEOSQ-D zur Messung der Zielorientierung im Sport," in *Sportpschologische Diagnostik, Prognostik und Intervention*, eds D. Teipel, R. Kemper, and D. Heinemann (Köln: bps), 57–62.

Revelle, W. (2022). *psych: Procedures for Personality and Psychological Research*. Evanston, IL: Northwestern University.

Ring, C., and Kavussanu, M. (2018). The impact of achievement goals on cheating in sport. *Psychol. Sport Exerc.* 35, 98–103. doi: 10.1016/j.psychsport.2017.11.016

Rosenbaum, S. M., Billinger, S., and Stieglitz, N. (2014). Let's be honest: a review of experimental evidence of honesty and truth-telling. *J. Econ. Psychol.* 45, 181–196. doi: 10.1016/j.joep.2014.10.002

Ruffle, B. J., and Tobol, Y. (2014). Honest on ondays: honesty and the temporal separation between decisions and payoffs. *Eur. Econ. Rev.* 65, 126–135. doi: 10.1016/j.euroecorev.2013.11.004

Simmler, M., Plassard, I., Schär, N., and Schuster, M. (2017). Understanding pathways to crime: can anomie theory explain higher crime rates among refugees? Current Findings from a Swiss Survey. *Eur. J. Crim. Policy. Res.* 23, 539–558. doi: 10.1007/s10610-017-9351-4

Stöber, J. (1999). Die Soziale-Erwünschtheits-Skala-17 (SES-17): Entwicklung und erste Befunde zu Reliabilität und Validität. *Diagnostica* 45, 173–177. doi: 10.1026//0012-1924.45.4.173

Tyler, J. M., and Feldman, R. S. (2004). Truth, lies, and self-presentation: how gender and anticipated future interaction relate to deceptive behavior. *J. Appl. Soc. Psychol.* 34, 2602–2615. doi: 10.1111/j.1559-1816.2004.tb01994.x

van Kleef, G. A., Wanders, F., Stamkou, E., and Homan, A. C. (2015). The social dynamics of breaking the rules: antecedents and consequences of norm-violating behavior. *Curr. Opin. Psychol.* 6, 25–31. doi: 10.1016/j.copsyc.2015.03.013

Waeber, A. (2021). Investigating dishonesty. Does context matter? *Front. Psychol.* 12:684735. doi: 10.3389/fpsyg.2021.684735

Anhang 2: Beitrag 2

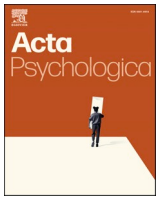
Leisge, K., Heggenberger, A., Kaczmarek, C., Pitsch, W., & Schaefer, S. (2025). Tracing the lines of deceit. Male cheating behavior increases in online versus face-to-face environments over time. *Acta Psychologica*, 259, 105373. https://doi.org/10.1016/j.actpsy.2025.105373

Acta Psychologica 259 (2025) 105373

Contents lists available at ScienceDirect

Acta Psychologica

journal homepage: www.elsevier.com/locate/actpsy



Tracing the lines of deceit. Male cheating behavior increases in online versus face-to-face environments over time

Kai Leisge [a,*], Anna Heggenberger [a], Christian Kaczmarek [a], Werner Pitsch [a], Sabine Schaefer [a]

[a] Department of Sport Science, Saarland University, 66123 Saarbruecken, Germany

ARTICLE INFO

Keywords:
Cheating
Dishonest behavior
Deviance
Over time
Online
In-person

ABSTRACT

This study investigates the development of cheating behavior over time in online versus in-person environments among university students, with a particular focus on potential gender differences. Previous research suggests that online anonymity increases cheating (Charness et al., 2007), and cheating increases over time (Garrett et al., 2016). In the current study, 137 participants (online: $n = 75$, in-person: $n = 62$) with a balanced gender distribution completed a fine-motor tracing task in four sessions. Individuals made a performance prediction before each trial prior to competing against each other for the highest scores. During the task, participants rated their own errors, so self-reported performance could be compared to expert-coded outcomes. Cheating was defined as the discrepancy between self-reported and actual errors. We distinguish between all instances of cheating (inconsequential for the score), and "meaningful cheating", which refers to cases where cheating improved the score. Findings suggest greater cheating for men as compared to women in the online condition when cheating led to an increase in performance scores, but not when all cheating is considered. In addition, "meaningful cheating" increased over time in the online condition, especially in men. This indicates that online situations could introduce cheating-opportunities in interpersonal situations, which may be used strategically by some individuals to gain advantages.

1. Introduction

In an increasingly digital world, understanding the factors that drive and change human behavior in in-person versus online settings is crucial. With the rise of online interactions, the traditional dynamics of honesty and accountability are shifting, and the absence of immediate social feedback in these settings can alter individuals' behavior. Online platforms offer a unique context where traditional social cues and accountability mechanisms may be diminished, potentially fostering dishonesty (Cartwright & Xue, 2020). Understanding these dynamics is critical as society becomes more reliant on digital communication. Additionally, this necessitates a close examination of how the perceived social distance and reduced social control influence cheating. This paper therefore focuses on cheating behavior among university students completing a fine motor learning task as part of a seminar course. The task simulates a learning context in which performance is evaluated, feedback is provided after each trial, and outcomes can be strategically influenced by participants. We investigate whether online as compared to in-person environments lead to increased cheating in a behavioural tracing task where self-reported outcomes are compared to the actual performance. Cheating is defined as the discrepancy between each individual's initially reported errors and a re-evaluation by two independent raters conducted after data collection. In line with research on self-serving justifications and bounded ethicality (Mazar et al., 2008; Shalvi et al., 2015), it can be argued that certain forms of cheating, particularly those that result in a clear benefit to the individual, reflect more deliberate and consequential forms of cheating. To capture this distinction, we propose differentiating between all instances of cheating and what we term "meaningful cheating". The latter refers specifically to cases where cheating directly enhances a participant's outcome by bypassing a baseline penalty or scoring rule. This distinction is important because it identifies situations in which participants gain more substantial benefits from cheating, compared to other forms that result in less significant personal gain. Additionally, the paper examines how cheating changes over time, considering that social interactions are often not a one-time occurrence, but are repeated. By integrating a brief discussion of terminology, and by incorporating perspectives from social psychology and economics, the aim is to provide a comprehensive understanding of

* Corresponding author at: Saarland University, Department of Sport Science, 66123 Saarbruecken, University Campus Building B8 1, Germany.
E-mail addresses: Kai.Leisge@uni-saarland.de (K. Leisge), Anna.Heggenberger@uni-saarland.de (A. Heggenberger), Christian.Kaczmarek@uni-saarland.de (C. Kaczmarek), We.Pitsch@mx.uni-saarland.de (W. Pitsch), Sabine.Schaefer@uni-saarland.de (S. Schaefer).

https://doi.org/10.1016/j.actpsy.2025.105373
Received 15 November 2024; Received in revised form 11 July 2025; Accepted 30 July 2025
Available online 6 August 2025

cheating in digital contexts.

1.1. Theoretical background

The concept of dishonesty encompasses a broad spectrum of behaviors that in general violate social or institutional norms for personal benefit. In the empirical literature, related terms such as unethical behavior (Wang & Chen, 2021), deviance (Pascaru-Goncear, 2023), lying (Childs, 2012), deception (Burgoon et al., 2003), and cheating (Ezquerra et al., 2018) are frequently used interchangeably to describe these actions. Although these behaviors share a common foundation of intentional norm violation (Kennette & Jelenic, 2023), the terminology often lacks conceptual precision (Grolleau et al., 2016). In this study, we adopt dishonest behavior and cheating as umbrella terms to capture acts intended to mislead others or gain unfair advantage, regardless of whether formal rules are explicitly broken. Specifically, we define cheating as a subtype of dishonest behavior, referring to the deliberate misrepresentation of one's performance to obtain a benefit that would otherwise not be earned.

The economic and social psychology perspectives try to explain why people cheat. With the concept of ***homo economicus*** the economic view suggests that humans are rational and selfish, while weighing the expected benefits of cheating (wealth maximizing) against its costs (probability of being caught; potential punishment; self-perception) (Gerlach et al., 2019; Henrich et al., 2001; Mazar et al., 2008; Rosenbaum et al., 2014). The self-licensing theory complements this by considering internal norms and intrinsic costs of cheating, thus viewing the idea of ***homo sociologicus*** as a more accurate description of human behavior (Kroher & Wolbring, 2015; Rosenbaum et al., 2014). It includes people's intrapersonal stability of deviant behavior, categorizing them as either ethical (never dishonest), mixed (finite intrinsic cost of DB) or economic types (zero cost of DB) (Kajackaite & Gneezy, 2017; Leisge et al., 2024). Integrating these perspectives reveals that individuals consider both material gain and the impact of their behavior on self-perception and social image (Bursztyn & Jensen, 2016; Waeber, 2021). This raises the question of whether the reduced social control and isolation of participants in their own homes during an online setting might reduce concerns about self-perception and social image, thereby increasing the likelihood and extent of cheating (Cohn et al., 2022).

The move from laboratory to online settings changes behavior and the norms individuals follow (Davis et al., 2002; Lieberman & Schroeder, 2020). Different contexts evoke different norms, where group dynamics and authority figures influence behavior (Bandura, 2002). Norms are less influential in anonymous interactions, while face-to-face settings make communication skills and sanctions relevant (Bohnet & Frey, 1999). The theory of social distance suggests that perceived remoteness between individuals influences conformity to social norms. In online environments, an increased social distance creates a context that reduces adherence to norms, the concern of being caught, the perceived punishment and the impact on self-perception when lying (Hoffmann et al., 1996; Waeber, 2021). In these settings, enhanced anonymity leads to reduced social control and accountability, shifting the focus towards self-interest without concern for others (Gerlach et al., 2019; Hoffmann et al., 1996; Varvarigos & Xin, 2020). This isolation, coupled with emotional and physical distance, supports the prediction of social distance theory of altered behavior in remote settings (Charness et al., 2007; Charness & Gneezy, 2008). In a laboratory group setting, the physical presence of experimenters and participants, along with identification and monitoring of performance, can encourage normative behavior and therefore reduce cheating (Bohnet & Frey, 1999; Cohn et al., 2022; Dickinson & McEvoy, 2021; Sudo, 2017).

1.2. Literature review

Research on cheating in online versus in-person settings shows mixed findings. When the same subject pool is tested using the "*coin flip*" task (Cohn et al., 2022) in both in-person and online environments, it does not lead to more dishonesty for monetary gain. However, fully anonymous online participants are more likely to engage in cheating (Dickinson & McEvoy, 2021). Kroher and Wolbring (2015) used a "*die-roll*" task (Fischbacher & Föllmi-Heusi, 2013) and reported that online settings lead to more cheating. In a between-subjects design, Waeber (2021) used an individual decision-making situation (i.e., random number or financial market) and found no systematic differences in cheating between online and in-person settings. Instead, gender differences based on the environment were observed, with males being more dishonest online compared to the laboratory. However, it should be noted that previous studies have not reached a consensus on the influence of gender on cheating. While most studies report that males tend to show higher levels of dishonest behavior compared to females (Gerlach et al., 2019; Grosch & Rau, 2017; Kennedy & Kray, 2022; Lohse & Qari, 2021), some studies have found no gender differences (Aoki et al., 2010; Ezquerra et al., 2018; Leisge et al., 2024; Lohse & Qari, 2014), and others have reported higher levels of dishonesty (Clot et al., 2014; Ruffle & Tobol, 2014) and deception (Tyler & Feldman, 2004) in women compared to men.

Focusing on these prior studies, the effect of social distance may not be uniform across genders. Research suggests that men and women differ in their sensitivity to social cues and external monitoring, and that individuals with prosocial orientations, among whom women are more commonly represented, tend to exhibit higher levels of honesty (Eagly & Wood, 2012; Grosch & Rau, 2017; Kennedy & Kray, 2022). Men have been found to be more competitive than women (Pierce & Thompson, 2018), and may therefore be more inclined to exploit the anonymity and reduced social control of online environments to gain advantages over competitors. In contrast, women generally display higher trustworthiness and tend to meet others' positive expectations (Levine et al., 2018), while also experiencing greater emotional distress when acting against their moral standards (Cohen et al., 2011). This may lead to stronger resistance to dishonest behavior, even in the absence of immediate social feedback or control. Therefore, increased anonymity in online settings may disproportionately free men from normative constraints, leading to higher levels of strategic dishonesty (Waeber, 2021).

Based on these theoretical perspectives and prior results, it is hypothesized that participants in the online environment will engage in more cheating than those in the in-person setting, due to increased social distance and reduced social control. Additionally, we expect gender to moderate this effect, such that males will show higher levels of cheating, particularly in the online setting.

Studies on the temporal development of cheating indicate its potential to escalate with repetition. It is theorized that the affective signal accompanying self-serving dishonesty diminishes over time, leading to increased cheating behavior (Garrett et al., 2016). Social learning theories further support this notion (Burgess & Akers, 1966). The absence of negative reinforcements, such as being caught and punished for cheating, may encourage cheating over time (Burgess & Akers, 1966). When individuals observe that neither they nor others are punished for dishonesty, they find no reason to change their behavior. Using brain imaging and behavioural two party sender-and-receiver tasks, Garrett et al. (2016) observed that self-serving dishonesty and the magnitude of cheating increases over repeated opportunities. This adaptation suggests that the brain may reduce signals that typically curb dishonesty, leading to more frequent dishonest acts (Garrett et al., 2016). Similarly, Welsh et al. (2015) argue that small ethical transgressions can evolve into larger unethical acts. Their problem-solving "*matrix*" task demonstrated that cheating increases over time (Welsh et al., 2015). We hypothesize that repeated exposure to similar opportunities for dishonesty lead to increased cheating over time. While previous studies have not directly examined whether this development differs by social setting or gender, we tentatively expect the increase in cheating to be more pronounced in online environments due to reduced social control and heightened anonymity. Furthermore, based on prior findings suggesting that males are

more likely to engage in dishonest behavior, we expect men to exhibit a steeper increase in cheating over time compared to women.

The current study measures cheating in a behavioural task repeatedly at an individual level in two conditions (online vs. in-person). Most previous studies focused on aggregate-level dishonesty metrics (see Gerlach et al., 2019 for an overview).

2. Method

2.1. Participants

A total of 137 (online: $n = 75$, in-person: $n = 62$) students were tested. In terms of gender, the sample is fairly balanced. The online condition includes 44 (59 %) men aged 19 to 33 years ($M = 22$, $SD = 2$) and 31 (41 %) women aged 18 to 38 ($M = 23$, $SD = 4$), while the in-person condition includes 31 (50 %) men with an age range from 20 to 29 ($M = 22$, $SD = 2$) and 31 (50 %) women aged 20 to 28 years ($M = 21$, $SD = 2$).

Due to the novelty of this study, the lack of effect sizes in the literature and due to the absence of reliable estimates for the standard deviation of the outcome measures in comparable designs, a power analysis for sample size estimation was not deemed appropriate. Measuring behavior and cheating repeatedly over the course of 20 trials increases the reliability of the data. We therefore assume that our study is sufficiently powered to detect the effects of interest. To support this assumption, a post hoc power analysis based on the observed effect size is reported at the end of the Results section.

Participants in both the online and in-person conditions were recruited through seminar courses at the university and participated as part of regular course activities. In both settings, participation was voluntary, and students received course credit for taking part. The testing sessions were part of different university courses at the Sport Science Institute at Saarland University. Therefore, participants were mainly sport and few psychology students, constituting convenience samples. Except normal or corrected-to-normal vision, no specific inclusion or exclusion criteria were defined prior to the study. Participants signed informed consent forms and were assured that their data would be anonymized and treated confidentially. The study was approved by the ethics committee of Saarland University.

2.2. Experimental task – tracing

The tracing task involves line tracing, thus requiring skill and accuracy. We used 20 different tracks (see Fig. 1) and the subjects' task was to trace the interior of the 2 mm wide corridor as far and accurately as possible for 30 s per trial. Scoring was based on the distance covered (one point for every five mm; maximum possible 125 points) and inaccuracies (touching the boundaries led to the subtraction of three points). Before each trial, individuals predicted the points they believed they could achieve for the upcoming tracing track. These predictions were recorded on the test sheets and were shared with the other participants in the group. If, after counting the errors and adjusting the points themselves, the actual performance met or exceeded the prediction, participants were credited with the predicted points. If the predicted performance was not achieved, this trial was scored as zero points. This procedure is based on the Selections Margins paradigm and proposes that there is an optimal level of task-difficulty for each individual that they can work on successfully (Schaefer et al., 2021, 2023). For example, if a participant predicted that he would achieve a score of 80 points but actually traced a distance of 90 with two errors, his final performance would be 84 (i.e., $90_{[\text{distance}]} - (2_{[\text{errors}]} * 3_{[\text{deduction per error}]})$). This would meet the predicted score of 80 points and therefore grant 80 points. However, if five errors had been made instead of three, the total performance would be 75 (i.e., $90_{[\text{distance}]} - (5_{[\text{errors}]} * 3_{[\text{deduction per error}]})$), leading to a score below the prediction and thus resulting in a "Zero-Point-Trial". The self-rated points for each trial were publicly announced to the group.

Given that the sample primarily consisted of sport science students, the selection of a fine motor tracing task was deemed appropriate. These students are generally familiar with tasks involving physical performance and coordination, making such a task engaging and ecologically valid. However, to ensure that prior experience would not influence performance, we deliberately selected a novel task unfamiliar to all participants, allowing us to observe learning processes over time. While the participants' background may contribute to slightly higher baseline motor skills, the focus of the study was not on absolute performance, but rather on the accuracy of self-assessment. This makes the tracing task suitable for isolating dishonest reporting behavior independent from motor competence.

2.3. Procedure – data collection

In both the online and in-person conditions, data collection was part of regular university seminar sessions. In the online setting, participants completed the tracing task at home during the 2021 Corona pandemic using MS Teams. The experimenter was visible throughout the session via webcam, and all participants were at home alone in front of their laptop with their camera directed towards their face. Unlike the in-person setting, where group presence and physical oversight were inherent, the level of supervision in the online setting was considerably lower. The actual task execution (i.e. tracing and error-marking) was not visible to anyone other than the individual participant, which eliminated opportunities for external monitoring, increased anonymity and heightened social distance. As data collection took place during a live seminar session, distractions from others in the home environment were likely minimal. For the in-person setting assessed in 2023, participants performed in groups of 19 to 22 persons in a seminar room at the university. In this setting, the degree of supervision was high, as participants were seated close to each other in one room, and both peers and the experimenter were present and able to observe the task performance.

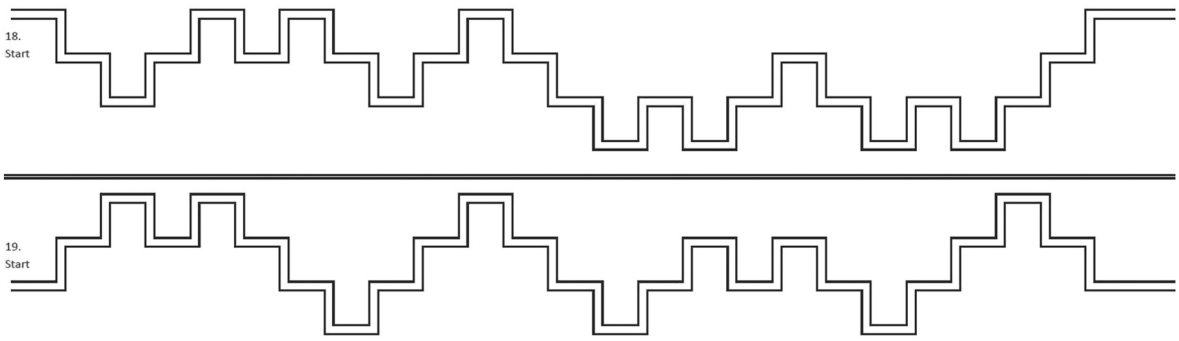


Fig. 1. Example of two tracing tracks.

This reduced anonymity and social distance.

For both conditions, participants completed 20 trials of the tracing task over four sessions, each spaced one week apart, with 5 trials per session. Test sessions of the tracing task lasted approximately 15 min each. Before commencing the actual test sessions, five shorter practice trials of 15 s each were conducted in the initial session. This allowed the test administrators, who were faculty members familiar to the participants, to ensure that instructions and tasks were comprehended. Participants demonstrated a clear understanding of the scoring procedure, as evidenced by their accurate communication of predicted scores and self-rated errors, which was further confirmed through checks of their test sheets after the initial sessions. At the end of the last testing session, the three most successful participants of each group (who had collected most points over the course of the four sessions) were publicly announced and honoured in an "*award ceremony*". Participants were not informed that after the test sessions, the tracing sheets were re-evaluated by two external and previously trained raters. As such, their self-assessments were made under the assumption that their own ratings were final and not subject to external verification. If the ratings of the two experts were different from each other by more than one error, a third rater was consulted, and the expert error score for this specific trial was decided upon in a group discussion.

The difference in errors between the self-assessments and the expert ratings was used as a measure of cheating for each individual trial. For example, a participant may have rated three errors for himself in a specific trial, but experts rated seven errors. This results in a cheating score of four. We will report this as the ***all*** cheating score, as cheating is recorded regardless of its consequences.

Since errors can result in the predicted performance not being achieved, we could identify cases of ***meaningful*** cheating where cheating meant avoiding a "Zero-Point-Trial". ***Meaningful*** cheating occurs when participants achieve the predicted score based on their own error assessment, although expert ratings resulted in a "Zero-Point-Trial". For example, a participant predicted 80 points for the upcoming trial and traces a distance of 90 with five errors but reports only three errors. Based on his own rating, the final performance would be adjusted to 81, thus awarding the predicted 80 points. However, expert ratings reduce the performance score to 75, which is lower than the predicted 80, thereby categorizing it as a "Zero-Point Trial" with a ***meaningful*** cheating extent of two.

2.4. Statistics

The statistical analysis was conducted using R Statistical Software (version 4.4.0) for Windows (R Core Team, 2022). The presence of ***meaningful*** and ***all*** cheating for each condition was tested using one-sample Wilcoxon tests by comparing the empirical values against zero. Two linear mixed-effects models with participant as a random factor were used to predict the influence of gender (with levels male and female) and condition (with levels online and in-person) on the mean extent of ***all*** and ***meaningful*** cheating for each trial. Trial was a repeated measures variable in these models. Follow-up analyses were done using similar models with the respective subsample and adapted predictors. Another mixed-effects model was conducted to analyse the connection between ***all*** and ***meaningful*** cheating in general. The primary outcome variable was the mean extent of cheating for the two types, and the model included fixed effects for gender, condition, and cheating type (with levels ***all*** and ***meaningful***), as well as their interactions. Additionally, a random intercept for participant was included. Post-hoc analyses using Wilcoxon tests were conducted to specifically examine differences across gender and condition, with the aim of clarifying the sources of the observed overall effects. The mixed-effects models were conducted with the nlme R package (Pinheiro et al., 2022). Descriptive statistics and *Cronbach's α* were calculated via the psych R package (Revelle, 2022). Effect sizes were computed by using the rcompanion R package (Mangiafico, 2023). No participants were excluded from the analyses. For all analyses the alpha level was set to 0.05.

3. Results

For the current study, participants were engaged in a game based on performance-predictions, traced distances, self-reported errors, and resulting points over the course of 20 trials. We present the data on these measures in Supplement 1.

Supplement 2 addresses the question whether participants may have had problems in recognizing errors in general, also when they rate somebody else's tracing performances. This was not the case. Our supplementary data show that participants were generally capable of accurately identifying errors in others' tracing paths. In fact, they even tended to be stricter than expert raters, and their accuracy and strictness improved over time.

3.1. General results: is cheating present?

On average, a difference between the participants' self-rated errors and those of the experts, indicating cheating, was detected in 58 % of all trials in the online condition, and in 66 % of all trials in the in-person condition. When focusing only on ***meaningful*** cheating, where differences between self-ratings and expert-ratings resulted in a "*Zero-Point-Trial*", cheating was observed in 27 % of all trials in the online condition, and in 22 % in the in-person condition. With a high effect size, one-sample Wilcoxon tests revealed that the empirical values for both ***all*** and ***meaningful*** cheating are significantly higher than zero for both men and women in the online and in-person conditions (see Table 1). Reliability analyses for ***all*** cheating showed excellent internal consistency for the online ($\alpha = 0.96$) and the in-person condition ($\alpha = 0.92$). For ***meaningful*** cheating, excellent internal consistency could be achieved for the online ($\alpha = 0.93$) and acceptable internal consistency for the in-person condition ($\alpha = 0.79$).

3.2. Does cheating increase differently over time for the two conditions?

Two linear mixed-effects models (estimated using maximum likelihood) were fitted to predict ***all*** and ***meaningful*** cheating over time, with fixed effects for gender, condition, and their interaction. The models included the participant identification variable as a random effect.

For ***all*** cheating, the total explanatory power is moderate (conditional $R^2 = 0.48$), with a small portion explained by the fixed effects alone ($R^2 = 0.05$). In this model, the interaction of time*condition is statistically significant and positive ($\beta = 0.13$, 95 % confidence interval (CI) [0.02, 0.23], $t_{(2371)} = 2.34$, $p = .019$). Follow up analyses reveal a significant increase in cheating over time in the online ($\beta = 0.17$, 95 % CI [0.10, 0.25], $t_{(1339)} = 4.57$, $p < .001$) but not the in-person condition ($\beta = 0.05$, 95 % CI [−0.02, 0.12], $t_{(1033)} = 1.28$, $p = .119$). Moreover, the triple interaction of time*condition*gender is significant and negative ($\beta = -0.07$, 95 % CI [−0.14, −0.01], $t_{(2371)} = -2.07$, $p = .038$). Follow-up analyses for the online environment indicate a significant increase over time for men ($\beta = 0.10$, 95 % CI [0.06, 0.14], $t_{(756)} = 4.96$, $p < .001$) and women ($\beta = 0.03$, 95 % CI [0.01, 0.05], $t_{(583)} = 2.31$, $p = .021$) with higher effects for men, while cheating behavior of men ($\beta = 0.04$, 95 % CI [0.01, 0.08], $t_{(498)} = 2.34$, $p = .020$) and women ($\beta = 0.04$, 95 % CI [0.02, 0.07], $t_{(535)} = 3.48$, $p < .001$) increases similarly in the in-person setting. The fixed effects of time, condition, gender, as well as the interaction of time*gender and condition*gender did not reach significance (see Table 2, Fig. 2a).

For the model predicting ***meaningful*** cheating over time, the total explanatory power is moderate (conditional $R^2 = 0.43$) with a small effect size for the fixed effects alone ($R^2 = 0.07$). Within this model the interaction of time*condition is statistically significant and positive ($\beta = 0.11$, 95 % CI [0.07, 0.16], $t_{(2371)} = 5.52$, $p < .001$) with a significant increase of cheating in the online ($\beta = 0.11$, 95 % CI [0.08, 0.15], $t_{(1339)} = 6.59$, $p < .001$) but not in the in-person condition ($\beta < 0.01$, 95 % CI

Table 1
Cheating is present in every condition for men and women.

			Test Statistics				
			M	SD	z	p	r
Online	All	Men	2.93	3.26	−5.56	**<0.001*****	0.87
		Women	1.40	1.79	−4.67	**<0.001*****	0.87
	Meaningful	Men	2.08	2.84	−5.49	**<0.001*****	0.87
		Women	0.84	1.39	−4.16	**<0.001*****	0.88
In-person	All	Men	2.98	1.82	−4.90	**<0.001*****	0.87
		Women	1.57	1.60	−4.99	**<0.001*****	0.87
	Meaningful	Men	0.33	0.33	−4.92	**<0.001*****	0.88
		Women	0.20	0.20	−4.51	**<0.001*****	0.88

Note. The Table presents the respective extent of cheating (mean, standard deviation), results of one-sample Wilcoxon test (z-value, *p*-value), and the effect size (r). Significant values are highlighted in bold for visual emphasis.
*** $p < .001$.

Table 2
Results of the linear mixed effects models for **all** DB and **meaningful** DB over time, and for the respective within-subject comparison.

	Test statistics					
	Estimate	SE	95 % CI		t	p
			LL	UL		
All cheating (Fig. 2a)						
Trial	0.05	0.04	−0.03	0.13	1.14	0.254
Gender	−1.16	0.62	−2.38	0.03	−1.86	0.064
Condition	−1.19	1.36	−3.85	1.47	−0.88	0.381
Trial*Gender	0	0.03	−0.05	0.05	−0.07	0.942
Trial*Condition	0.13	0.05	0.02	0.23	2.34	**0.019***
Gender*Condition	0.48	0.88	−1.24	2.20	0.55	0.583
Trial*Gender*Condition	−0.07	0.03	−0.14	−0.01	−2.07	**0.039***
Meaningful cheating (Fig. 2b)						
Trial	−0.01	0.02	−0.03	0.03	−0.08	0.941
Gender	0.08	0.49	−0.87	1.04	0.17	0.964
Condition	0.40	0.46	−0.49	1.29	0.88	0.380
Trial*Gender	0.01	0.02	−0.04	0.05	0.37	0.708
Trial*Condition	0.12	0.02	0.07	0.16	5.52	**0.001*****
Gender*Condition	−0.17	0.68	−1.51	1.17	−0.25	0.804
Trial*Gender*Condition	−0.10	0.03	−0.16	−0.05	−3.48	**0.001****
Model 3 (without Trial; Fig. 3)						
Type (within)	−2.66	0.23	−3.10	−2.22	−11.83	**<0.001*****
Gender	−1.22	0.51	−2.22	−0.22	−2.38	**0.019***
Condition	−0.15	0.48	−1.09	1.29	−0.32	0.752
Type*Gender	1.29	0.32	1.23	2.38	4.04	**<0.001*****
Type*Condition	1.81	0.29	−1.61	1.18	6.15	**<0.001*****
Gender*Condition	−0.22	0.72	−0.71	0.52	−0.30	0.766
Type*Gender*Condition	−0.99	0.43	−1.83	−0.15	−2.29	**0.024***

Note. Significant values are highlighted in bold for visual emphasis.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

[−0.01, 0.01], $t_{(1033)} = -0.29$ $p = .770$). The triple interaction of time*condition*gender is significant and negative (β = −0.10, 95 % CI [−0.16, −0.05], $t_{(2371)} = -3.47$, $p < .001$). Follow up analyses for the online condition reveal a significant increase in cheating for men (β = 0.11, 95 % CI [0.07, 0.15], $t_{(756)} = 5.50$, $p < .001$) but not for women (β = 0.02, 95 % CI [−0.01, 0.04], $t_{(583)} = 1.37$, $p = .170$). Within the in-person setting, no significant difference in the increase of ***meaningful*** cheating over time was found for men and women. The fixed effects of time, condition, gender as well as the interaction of time*gender and condition*gender failed to reach significance (see Table 2, Fig. 2b).

A post hoc power analysis was conducted using G*Power 3 (Faul et al., 2007), employing a repeated-measures ANOVA (within-between interaction) as the base model. The analysis was based on a small observed effect size ($f = 0.075$), a total sample size of $n = 137$, four groups, and 20 repeated measurements. A conservative correlation among repeated measures was set at 0.8, and a nonsphericity correction of 0.5 was applied. The results indicated a high level of statistical power, with $1 - \beta = 0.97$.

3.3. Differences between all cheating and meaningful cheating

We fitted a linear mixed-effects model (estimated using maximum likelihood) to predict the mean extent of cheating, incorporating the within-subject factor cheating type (with levels ***all*** and ***meaningful***, see Table 2). The model included participant as a random effect, and gender, condition, cheating type and their respective interactions as fixed effects. The total explanatory power of the model is high (conditional $R^2 = 0.85$), with a small portion explained by the fixed effects alone ($R^2 = 0.18$). In this model, the effect of gender is statistically significant and negative (β = −1.22, 95 % CI [−2.22, −0.22], $t_{(132)} = -2.38$, $p = .019$), indicating that cheating is lower for women compared to men. Additionally the effect of cheating type is significant and negative (β =

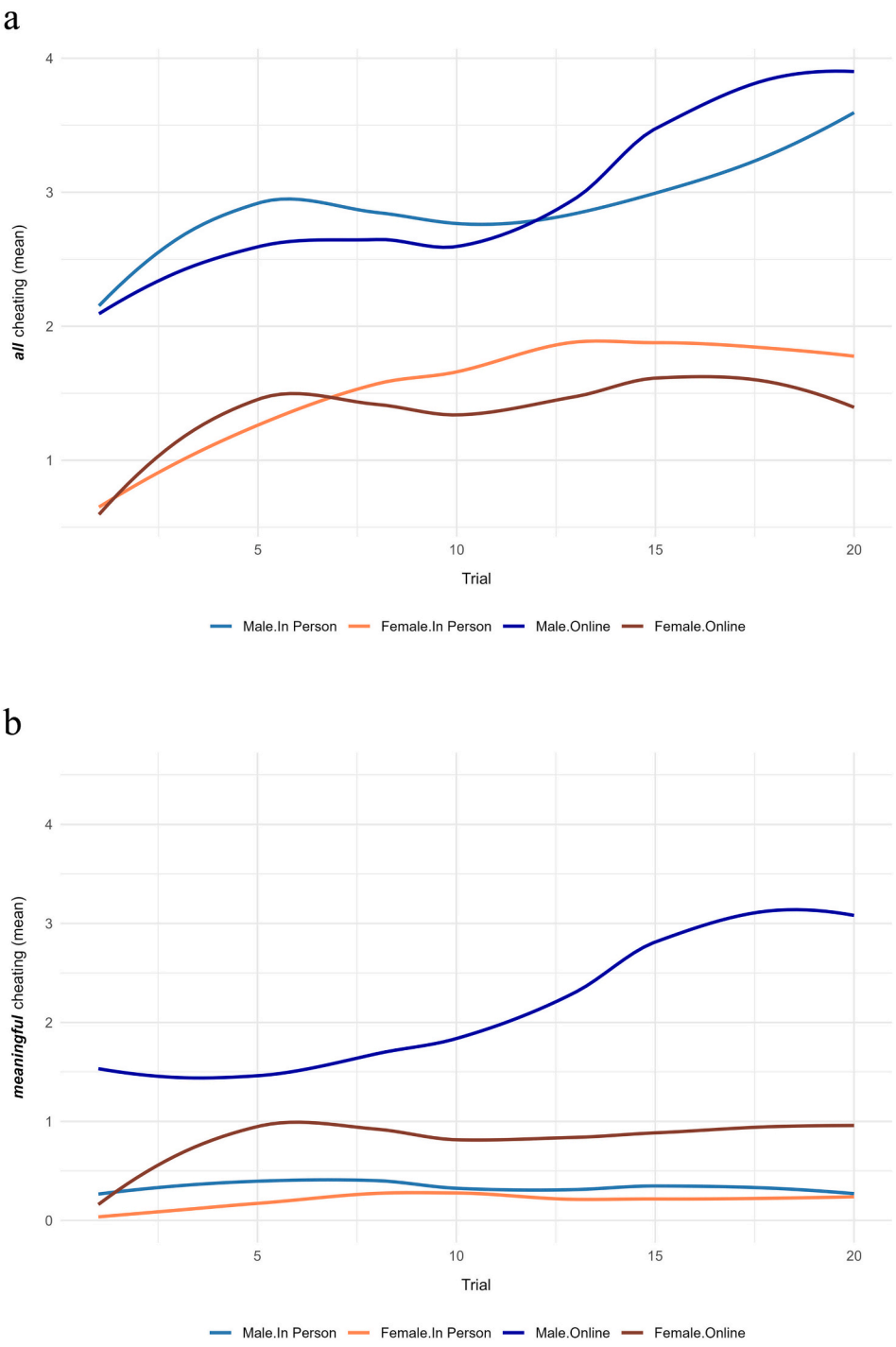


Fig. 2. Cheating increases over time, considering the factors of gender and condition, for (a) ***all*** and (b) ***meaningful*** cheating.
Note. A locally weighted scatterplot smoothing (LOESS) method was applied to the data to allow for clearer visualization of patterns while minimizing noise (see the supplement for unsmoothed plots).

−2.66, 95 % CI [−3.10, −2.22], $t_{(132)} = -11.82$, $p < .001$), with higher ***all*** compared to ***meaningful*** cheating. Moreover the interaction effects of gender*cheating type (β = 1.29, 95 % CI [0.67, 1.90], $t_{(132)} = 4.04$, $p < .001$), condition*cheating type (β = 1.81, 95 % CI [1.23, 2.38], $t_{(132)} = 6.15$, $p < .001$) and gender*condition*cheating type (β = −0.99, 95 % CI [−1.83, −0.15], $t_{(132)} = -2.29$, $p = .024$) are significant (for follow-up Wilcoxon tests see supplement 3). Regarding the primary hypothesis, the results indicate significantly more ***meaningful*** cheating among men in online compared to in-person settings ($z = -3.03$, $p = .002$, $r = 0.35$) (see Fig. 3). However, no significant difference was observed for women ($z = -0.48$, $p = .634$, $r = 0.06$). All cheating differed significantly between men and women while the condition did not reveal a significant influence (online: $z = -2.31$, $p = .021$, $r = 0.27$; in-person: $z = -3.13$, $p = .002$, $r = 0.40$).

4. Discussion

This experiment was designed to repeatedly measure **cheating** on the individual level in a fine motor task over multiple sessions. The goal was to investigate the extent of cheating across different contexts (online

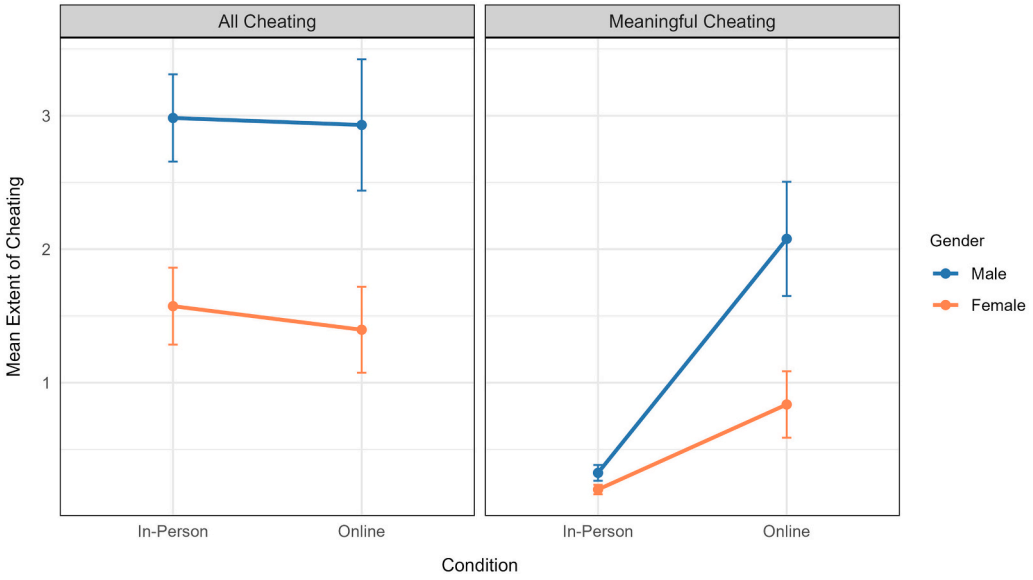


Fig. 3. Increase in the extent of meaningful cheating for men in the online compared to the in-person setting. Error bars represent the standard error of mean.

versus in-person) and to track potential changes over time. Unlike traditional cheating paradigms (e.g., coin flip or die roll), our design involves skill-based performance, public prediction, and self-assessment, all of which interact to shape behavior. This complexity can be seen as a strength of the study, as it mirrors real-world scenarios where dishonesty often arises in ambiguous, self-regulated contexts.

The initial repeated measures analysis of each individual trial for ***all*** cheating revealed no significant differences between the online and in-person conditions. Consequently, the hypothesis that ***all*** cheating would be higher in the socially distanced online condition was not supported.

However, when focusing on ***meaningful*** cheating, where the discrepancy between self-ratings and expert ratings resulted in a "Zero-Point-Trial", a different pattern emerged. Significant differences were observed for men between the online and in-person conditions, with more ***meaningful*** cheating in the online setting. This finding suggests that cheating is higher online for men when it leads to a personally meaningful outcome (achieving the prediction and thus scoring points and having the chance to be awarded in a public "award ceremony"). These results align with the theoretical framework of social distance. This study provides further confirmation of the results reported by Kroher and Wolbring (2015) and Waeber (2021). It appears that the perceived social distance is higher in the online condition, even though participants in the online MS teams meeting had turned on their cameras, recognized each other, and were addressed with their name during the session. However, being "caught" by another participant or by the experimenter while cheating was only possible in the in-person setting, where others may watch participants scoring their own errors. Higher ***meaningful*** cheating for men online suggests that the absence of direct social control leads to increased strategic dishonesty.

For the current study, our analysis revealed gender differences in the mean extent of cheating. Specifically, men showed a greater extent of ***all*** cheating in online as well as in-person settings compared to women. However, when focusing on ***meaningful*** cheating, the differences between men and women became more context-dependent. Although ***meaningful*** cheating is not significantly higher for men than for women in the in-person condition, it is higher in the online condition. Beyond this, there were also different increases of cheating over time (see below).

The observed gender differences in meaningful cheating, particularly in the online setting, may be driven by a combination of social and psychological mechanisms. As noted in the introduction, women are more likely to exhibit prosocial orientations and stronger adherence to social norms (Eagly & Wood, 2012; Grosch & Rau, 2017). These tendencies may translate into a greater internalization of moral standards, which continue to exert influence even in low-supervision, high-anonymity environments. Additionally, women have been found to show greater emotional distress when violating moral expectations (Cohen et al., 2011), which could increase the psychological cost of dishonest behavior. Risk aversion may also play a role: Previous studies suggest that women tend to be more risk-averse than men (Croson & Gneezy, 2009), and although the likelihood of being caught was low in the online setting, the perceived reputational or self-image risks associated with cheating may still have been a deterrent. Finally, intrinsic incentives - such as maintaining a sense of integrity or living up to internal standards - may be more salient for women, making them less likely to engage in strategic dishonesty even when the external pressures are minimal. This suggests that the absence of a significant increase in meaningful cheating among women in the online condition may not reflect a lack of opportunity, but rather a greater internal resistance to exploiting those opportunities. Unlike men, whose behavior appeared more sensitive to the reduction in external control, women's behavior remained comparatively stable, reinforcing the idea that their dishonesty is less contingent on context and more grounded in internalized values.

4.1. Trial

The influence of trial on dishonesty was also significant in this study. In the online condition, both ***all*** and ***meaningful*** cheating increased significantly over time, consistent with the findings of Garrett et al. (2016) and Welsh et al. (2015). This supports the hypothesis that the psychological barriers to dishonesty decrease with repeated exposure to the task in a socially distanced and less controlled setting.

Conversely, in the in-person condition, a significant increase over time could only be observed for ***all*** but not for ***meaningful*** cheating. This finding can be interpreted through the lens of social distance theory, which posits that the physical presence of experimenters and other participants may maintain a level of social control that deters the escalation of dishonest behavior. The possibility to visibly monitor others in the in-person setting likely sustained the participants' fear of being caught, thereby mitigating the increase in cheating over time.

Men exhibited a significant increase in ***meaningful*** cheating over time in the online condition, whereas women did not show such an increase. In contrast, in the in-person condition, neither men nor women

demonstrated a significant increase in ***meaningful*** cheating over time. This pattern suggests that gender differences in cheating are influenced by both the context and the type of cheating. Since our supplementary analysis (see Supplement 2) demonstrates that participants were generally capable of accurately identifying errors in standardized tracing paths, we interpret ***meaningful*** cheating as a conservative and valid indicator of intentional dishonesty. This supports the notion that the observed increase in meaningful cheating over time, especially in the online condition, is not merely a result of perceptual error, but reflects a strategic and intentional form of dishonesty.

4.2. Limitations

While this study provides valuable insights into the dynamics of cheating in online and in-person settings, several limitations must be acknowledged.

Firstly, the study utilizes the theory of social distance to examine variations in cheating between online and in-person settings. However, this theory may not encompass all factors influencing dishonesty, such as the nuances of different online interactions or psychometric variables like achievement motivation or personality traits.

Secondly, the sample consisted primarily of sport and few psychology students, which may reduce the generalizability of the findings. On the one hand, sport students may exhibit heightened competitiveness and a strong motivation to succeed, potentially increasing their susceptibility to strategic dishonesty in a performance-based task. This competitive orientation might amplify tendencies to exploit the reduced social control in online contexts, thereby influencing the extent of cheating observed. On the other hand, sport education often emphasizes values such as fair play, integrity, and respect for rules, which could also lead to greater internalized moral standards in competitive situations. These contrasting forces may interact in complex ways, potentially moderating the likelihood of dishonest behavior in this population. Therefore, the specific characteristics of this sample limit the extent to which these results can be generalized to other populations. The participants' relatively homogeneous backgrounds in terms of age and education, coupled with the fact that many knew each other prior to the study, could have influenced the results. Knowing each other may have led to concerns about reputation, particularly in the in-person condition, where a cheater may be “caught” by other participants or the experimenter.

Additionally, the tracing task used to assess cheating might not capture the full complexity of dishonest behavior across different contexts, as it focuses on a specific type of skill-based dishonesty. Personal meaningfulness of the task may differ between subjects, and influence the willingness to increase one's score by cheating. It is also important to recognize that the tracing task differs from those traditionally employed in dishonesty research, such as the coin flip, die roll, or matrix problem tasks. These established paradigms typically involve random outcomes and assess cheating only at the aggregate level. In contrast, our tracing task engages participants' physical skills and allows for repeated, individual-level measurement of dishonest behavior, which is essential for examining temporal patterns. Furthermore, while our findings indicate that gender differences in cheating were context-dependent, it is possible that gender differences in fine motor accuracy or risk perception could influence strategic responses. Nevertheless, because cheating was operationalized as the discrepancy between self-reported and expert-coded errors, our measure minimizes the confounding influence of actual performance ability and provides a focused assessment of dishonest intent.

4.3. Conclusions and implications

The findings of the current study suggest greater cheating for men as compared to women in the online condition, when cheating led to an increase in performance scores. In addition, cheating increased over time in the online condition, especially in men. This indicates that online situations could introduce cheating-opportunities in interpersonal situations, which may be used strategically by some individuals. Situations in which participants perform a task online as compared to an in-person setting (e.g., in the context of an online experiment for scientific research, or when course content of a teaching module is assessed by an online exam) could therefore lead to biased results. To address this, it is recommended to reduce anonymity, for instance, by introducing visible identity cues or accountability reminders, which may help mitigate cheating, particularly among individuals who are more sensitive to social control. From a policy perspective, educational institutions and research ethics boards may need to establish guidelines or codes of conduct that address the heightened risk of dishonest behavior in unsupervised online environments. These measures could help protect data integrity in both scientific research and educational assessments.

CRediT authorship contribution statement

Kai Leisge: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Conceptualization. **Anna Heggenberger:** Writing – review & editing, Investigation. **Christian Kaczmarek:** Writing – review & editing, Investigation. **Werner Pitsch:** Writing – review & editing, Formal analysis. **Sabine Schaefer:** Writing – review & editing, Supervision, Methodology, Investigation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethical Approval and consent

This study was approved by the ethics committee of Saarland University. All participants provided written informed consent prior to their involvement in the research.

Funding statement

This research was funded by Saarland University (salary).

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.actpsy.2025.105373.

Data availability

The data, analyses script and the tracing sheets are openly available at: https://osf.io/67x3r/.

References

Aoki, K., Akai, K., & Onoshiro, K. (2010). Deception and confession: Experimental evidence from a deception game in Japan. In *ISER Discussion Paper No. 786*. https://www.econstor.eu/handle/10419/92748.

Bandura, A. (2002). Selective moral disengagement in the exercise of moral agency. *Journal of Moral Education, 31*(2), 101–119. https://doi.org/10.1080/0305724022014322

Bohnet, I., & Frey, B. S. (1999). Social distance and other-regarding behavior in dictator games: Comment. *American Economic Review, 89*(1), 335–339. https://doi.org/10.1257/aer.89.1.335

Burgess, R. L., & Akers, R. L. (1966). A differential association-reinforcement theory of criminal behavior. *Social Problems, 14*(2), 128–147. https://doi.org/10.2307/798612

Burgoon, J. K., Stoner, G. A., Bonito, J. A., & Dunbar, N. E. (2003). Trust and deception in mediated communication. In *36th Annual Hawaii International Conference on System Sciences, 2003. Proceedings of the IEEE*. https://doi.org/10.1109/hicss.2003.1173792

Bursztyn, L., & Jensen, R. (2016). Social image and economic behavior in the field: Identifying, understanding and shaping social pressure. *Annual Review of Economics, 9*(1), 131–153. https://doi.org/10.1146/annurev-economics-063016-103625

Cartwright, E., & Xue, L. (2020). Lie aversion, anonymity and social distance: Are people more willing to lie using a mobile phone? *SSRN*. https://doi.org/10.2139/ssrn.3598023

Charness, G., & Gneezy, U. (2008). What's in a name? Anonymity and social distance in dictator and ultimatum games. *Journal of Economic Behavior & Organization, 68*(1), 29–35. https://doi.org/10.1016/j.jebo.2008.03.001

Charness, G., Haruvy, E., & Sonsino, D. (2007). Social distance and reciprocity: An internet experiment. *Journal of Economic Behavior & Organization, 63*(1), 88–103. https://doi.org/10.1016/j.jebo.2005.04.021

Childs, J. (2012). Gender differences in lying. *Economics Letters, 114*(2), 147–149. https://doi.org/10.1016/j.econlet.2011.10.006

Clot, S., Grolleau, G., & Ibanez, L. (2014). Smug alert! Exploring self-licensing behavior in a cheating game. *Economics Letters, 123*(2), 191–194. https://doi.org/10.1016/j.econlet.2014.01.039

Cohen, T. R., Wolf, S. T., Panter, A. T., & Insko, C. A. (2011). Introducing the GASP scale: A new measure of guilt and shame proneness. *Journal of Personality and Social Psychology, 100*(5), 947–966. https://doi.org/10.1037/a0022641

Cohn, A., Gesche, T., & Maréchal, M. A. (2022). Honesty in the digital age. *Management Science, 68*(2), 827–845. https://doi.org/10.1287/mnsc.2021.3985

Croson, R., & Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic Literature, 47*(2), 448–474. https://doi.org/10.1257/jel.47.2.448

Davis, J. P., Farnham, S., & Jensen, C. (2002). Decreasing online 'bad' behavior. In L. Terveen (Ed.), *ACM conferences, CHI '02 extended abstracts on human factors in computing systems* (pp. 718–719). ACM. https://doi.org/10.1145/506443.506563.

Dickinson, D. L., & McEvoy, D. M. (2021). Further from the truth: The impact of moving from in-person to online settings on dishonest behavior. *Journal of Behavioral and Experimental Economics, 90*, Article 101649. https://doi.org/10.1016/j.socec.2020.101649

Eagly, A. H., & Wood, W. (2012). Social role theory. In *, 2(9)*. *Handbook of theories of social psychology* (pp. 458–476). https://doi.org/10.4135/9781446249222.n49

Ezquerra, L., Kolev, G. I., & Rodriguez-Lara, I. (2018). Gender differences in cheating: Loss vs. gain framing. *Economics Letters, 163*, 46–49. https://doi.org/10.1016/j.econlet.2017.11.016

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(2), 175–191. https://doi.org/10.3758/BF03193146

Fischbacher, U., & Föllmi-Heusi, F. (2013). Lies in disguise - an experimental study on cheating. *Journal of the European Economic Association, 11*(3), 525–547. https://doi.org/10.1111/jeea.12014

Garrett, N., Lazzaro, S. C., Ariely, D., & Sharot, T. (2016). The brain adapts to dishonesty. *Nature Neuroscience, 19*(12), 1727–1732. https://doi.org/10.1038/nn.4426

Gerlach, P., Teodorescu, K., & Hertwig, R. (2019). The truth about lies: A meta-analysis on dishonest behavior. *Psychological Bulletin, 145*(1), 1–44. https://doi.org/10.1037/bul0000174

Grolleau, G., Kocher, M. G., & Sutan, A. (2016). Cheating and loss aversion: Do people cheat more to avoid a loss? *Management Science, 62*(12), 3428–3438. https://doi.org/10.1287/mnsc.2015.2313

Grosch, K., & Rau, H. A. (2017). Gender differences in honesty: The role of social value orientation. *Journal of Economic Psychology, 62*, 258–267. https://doi.org/10.1016/j.joep.2017.07.008

Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., & McElreath, R. (2001). In search of homo economicus: Behavioral experiments in 15 small-scale societies. *American Economic Review, 91*(2), 73–78. https://doi.org/10.1257/aer.91.2.73

Hoffmann, E., McCabe, K., & Smith, V. L. (1996). Social distance and other-regarding behavior in dictator games. *The American Economic Review, 86*(3), 653–660. https://www.jstor.org/stable/2118218.

Kajackaite, A., & Gneezy, U. (2017). Incentives and cheating. *Games and Economic Behavior, 102*, 433–444. https://doi.org/10.1016/j.geb.2017.01.015

Kennedy, J. A., & Kray, L. J. (2022). Gender similarities and differences in dishonesty. *Current Opinion in Psychology, 48*, Article 101461. https://doi.org/10.1016/j.copsyc.2022.101461

Kennette, L. N., & Jelenic, M. (2023). Cheating: It depends how you define it. *Canadian Perspectives on Academic Integrity, 5*(2), 16–33. https://doi.org/10.11575/cpai.v5i2.75649

Kroher, M., & Wolbring, T. (2015). Social control, social learning, and cheating: Evidence from lab and online experiments on dishonesty. *Social Science Research, 53*, 311–324. https://doi.org/10.1016/j.ssresearch.2015.06.003

Leisge, K., Kaczmarek, C., & Schaefer, S. (2024). How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior. *Frontiers in Psychology, 15*, 1297058. https://doi.org/10.3389/fpsyg.2024.1297058

Levine, E. E., Bitterly, T. B., Cohen, T. R., & Schweitzer, M. E. (2018). Who is trustworthy? Predicting trustworthy intentions and behavior. *Journal of Personality and Social Psychology, 115*(3), 468–494. https://doi.org/10.1037/pspi0000136

Lieberman, A., & Schroeder, J. (2020). Two social lives: How differences between online and offline interaction influence social outcomes. *Current Opinion in Psychology, 31*, 16–21. https://doi.org/10.1016/j.copsyc.2019.06.022

Lohse, T., & Qari, S. (2014). Gender differences in deception behaviour – The role of the counterpart. *Applied Economics Letters, 21*(10), 702–705. https://doi.org/10.1080/13504851.2013.848020

Lohse, T., & Qari, S. (2021). Gender differences in face-to-face deceptive behavior. *Journal of Economic Behavior & Organization, 187*, 1–15. https://doi.org/10.1016/j.jebo.2021.03.026

Mangiafico, S. S. (2023). *Rcompanion: Functions to support extension education program evaluation (version 2.4.30)*. Computer software. Retrieved from https://CRAN.R-project.org/package=rcompanion.

Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. *Journal of Marketing Research, 45*(6), 633–644. https://doi.org/10.1509/jmkr.45.6.633

Pascaru-Goncear, V. (2023). Determining causes of deviant behavior in students. *Revista Romaneasca Pentru Educatie Multidimensionala, 15*(3), 98–106. https://doi.org/10.18662/rrem/15.3/756

Pierce, J. R., & Thompson, L. (2018). Explaining differences in men and women's use of unethical tactics in negotiations. *Negotiation and Conflict Management Research, 11*(4), 278–297. https://doi.org/10.1111/ncmr.12135

Pinheiro, J., Bates, D., & R Core Team. (2022). *nlme: Linear and nonlinear mixed effects models (Version 3.1-157)*. Computer software. Retrieved from https://CRAN.R-project.org/package=nlme.

R Core Team. (2022). *R: A language and environment for statistical computing (version 4.2.0)*. Computer software. Retrieved from https://www.R-project.org/.

Revelle, W. (2022). *Psych: Procedures for personality and psychological research (version 2.2.9)*. Computer software. Retrieved from https://CRAN.R-project.org/package=psych.

Rosenbaum, S. M., Billinger, S., & Stieglitz, N. (2014). Let's be honest: A review of experimental evidence of honesty and truth-telling. *Journal of Economic Psychology, 45*, 181–196. https://doi.org/10.1016/j.joep.2014.10.002

Ruffle, B. J., & Tobol, Y. (2014). Honest on Mondays: Honesty and the temporal separation between decisions and payoffs. *European Economic Review, 65*, 126–135. https://doi.org/10.1016/j.euroecorev.2013.11.004

Schaefer, S., Ohlinger, C., & Frisch, N. (2021). Choosing an optimal motor-task difficulty is not trivial: The influence of age and expertise. *Psychology of Sport and Exercise, 57*, Article 102031. https://doi.org/10.1016/j.psychsport.2021.102031

Schaefer, S., Riediger, M., Li, C.-S., & Lindenberger, U. (2023). Too easy, too hard, or just right: Task-difficulty choices differ by age and gender. *International Journal of Behavioral Development, 47*(3), 253–264. https://doi.org/10.1177/01650254231160126

Shalvi, S., Gino, F., Barkan, R., & Ayal, S. (2015). Self-serving justifications: Doing wrong and feeling moral. *Current Directions in Psychological Science, 24*(2), 125–130. https://doi.org/10.1177/0963721414553264

Sudo, N. (2017). Does the internet make people selfish? Effects of the internet on citizens'political attitudes. In K. Endo, S. Kurihara, T. Kamihigashi, & F. Toriumi (Eds.), *Reconstruction of the public sphere in the socially mediated age* (pp. 47–69). Springer. https://doi.org/10.1007/978-981-10-6138-7_4.

Tyler, J. M., & Feldman, R. S. (2004). Truth, lies, and self-presentation: How gender and anticipated future interaction relate to deceptive behavior. *Journal of Applied Social Psychology, 34*(12), 2602–2615. https://doi.org/10.1111/j.1559-1816.2004.tb01994.x

Varvarigos, D., & Xin, G. (2020). Social distance and economic development. *Macroeconomic Dynamics, 24*(4), 860–881. https://doi.org/10.1017/s1365100518000512

Waeber, A. (2021). Investigating dishonesty-does context matter? *Frontiers in Psychology, 12*, Article 684735. https://doi.org/10.3389/fpsyg.2021.684735

Wang, S., & Chen, T. (2021). When and why contexts predict unethical behavior: Evidence from a laboratory bribery game. *Frontiers in Psychology, 12*, Article 675319. https://doi.org/10.3389/fpsyg.2021.675319

Welsh, D. T., Ordóñez, L. D., Snyder, D. G., & Christian, M. S. (2015). The slippery slope: How small ethical transgressions pave the way for larger future transgressions. *Journal of Applied Psychology, 100*(1), 114–127. https://doi.org/10.1037/a0036950

Anhang 3: Beitrag 3

Leisge, K., Pitsch, W., & Schaefer, S. (im Review Prozess). Spotting the difference from lab to screen: How social distance and anonymity affect dishonesty. [Eingereicht bei Acta Psychologica]

Spotting the Difference from Lab to Screen: How Social Distance and Anonymity Affect Dishonesty

Kai Leisge [a]*, Werner Pitsch [b], Sabine Schaefer [c]

[a] Department of Sport Science, Saarland University, 66123 Saarbruecken, Germany, Kai.Leisge@uni-saarland.de

[b] Department of Sport Science, Saarland University, 66123 Saarbruecken, Germany, We.Pitsch@mx.uni-saarland.de

[c] Department of Sport Science, Saarland University, 66123 Saarbruecken, Germany, Sabine.Schaefer@uni-saarland.de

Corresponding Author: Kai Leisge, Saarland University, Department of Sport Science, 66123 Saarbruecken, University Campus Building B8 1, Germany. E-mail address: kai.leisge@uni-saarland.de

Abstract

This study investigates whether dishonest behavior (DB) differs between online and in-person environments and how gender moderates this effect. Drawing on theories of social distance and social presence, we expected higher DB in online settings due to increased anonymity and reduced observability. A total of 144 participants (online: $n = 71$, in-person: $n = 63$) completed the "Difference Spotting Task" which included 80 trials of solvable and unsolvable image pairs. DB is determined when participants claim to have solved an unsolvable pair. This allows for the measure of the occurrence (reporting at least one "Yes" on unsolvable trials) and the extent (the total number of "Yes" responses on unsolvable trials) of DB. Results revealed a significantly higher likelihood of engaging in DB online compared to in-person. The gender effect was significant as well, with men showing a higher likelihood of DB than women. Crucially, a significant interaction indicated that the online context disproportionately increased the occurrence of DB among men. Their odds of DB were over 14 times higher online than in-person, whereas women's behavior was comparable across settings. While the extent of DB did not differ significantly between conditions overall, men exhibited significantly higher levels of DB online than compared to in-person. These findings suggest that online environments lower the threshold for engaging in DB, particularly for men, likely due to diminished social presence and attenuated reputational concerns.

Keywords: cheating, dishonest behavior, deviance, lying, online, in-person, social presence

1 Introduction

In today's digital world, it is crucial to understand how different contexts of social interaction, such as online or in-person environments, shape human behavior. Whether in face-to-face settings or online environments, social interactions are a fundamental part of everyday life, influencing decisions at work, in education, and during leisure activities. These interactions should in general be guided by social norms and moral values, which promote honesty and accountability (Abeler et al., 2019). However, despite the importance of adhering to these rules, dishonest behavior (DB) ranging from minor deceptions in daily conversations (Burgoon et al., 2003), to deviations with significant societal impacts like doping in sports (Pitsch & Emrich, 2012), or marital infidelity (Whisman & Snyder, 2007), up to major violations such as tax evasion or bribes (Loewen et al., 2013), is prevalent and can inflict serious damage. Minor DB erodes trust in everyday interactions, which is fundamental to social relationships, while major acts of DB have broad societal impacts, including financial losses, undermined public confidence and health risks. With the rapid growth of digital communication, the nature of DB may be shifting, particularly as online interactions often lack traditional social cues that enforce accountability (Kroher & Wolbring, 2015).

The aim of this study is to examine whether two different settings of social interaction, namely online or in-person, elicit DB differently.

The following paragraphs explore the broader meaning and forms of DB according to present research and introduce various experimental tasks commonly used to measure it. Additionally, we present social psychological and economic theory in an attempt to explain why individuals engage in DB. Furthermore, the concepts of anonymity and social distance are examined to provide an empirical foundation for comparing DB in online and in-person environments, which is the main purpose of this study.

1.1 Dishonesty in general

Dishonesty takes various forms, and many expressions are used interchangeably to describe it. In the empirical literature, these terms cover unethical behavior (Wang & Chen, 2021), deviant behavior (Pascaru-Goncear, 2023), and dishonest behavior (Leisge et al., 2024), along with lying (Childs, 2012), cheating (Ezquerra et al., 2018), and deception (Burgoon et al., 2003). All of these concepts refer to behavior that deviates from established social norms (Kennette & Jelenic, 2023), or institutionalized expectations (Frenger & Pitsch, 2021). This behavior is typically characterized by an intention to violate rules and achieve illegitimate gains (Fischbacher & Föllmi-Heusi, 2013; Ring & Kavussanu, 2018). However, definitions often lack clear distinctions, making it difficult to differentiate between the various forms of DB (Grolleau et al., 2016). Due to this ambiguity, we subsequently use the overarching term "dishonest behavior" (DB).

Since DB involves violating norms or deviating from socially accepted values, it is challenging to measure. Participants tend to avoid admitting or openly engaging in DB, which led researchers to use various heterogeneous experimental tasks to identify it. The most prominent subclass of these experiments involves self-reported outcomes of random events. Here, participants perform a simple task, such as rolling a die (Grosch & Rau, 2017), or tossing a coin (Chowdhury et al., 2021). The prospect of financial gain is linked to the outcome of such random event and is communicated to all subjects beforehand. Participants may therefore engage in DB by inaccurately reporting the outcome of the random event. On the one hand, this approach usually does not allow for the detection of DB at the individual level, as the prevalence of DB is estimated by comparing reported outcomes to the expected theoretical distribution of the random event (Rosenbaum et al., 2014). However, variations of this task have been developed in which the use of a bluetooth die enables measurement at the individual level (Yaniv et al., 2019). On the other hand, the main advantage of this method is

that it ensures complete anonymity, as participants do not fear detection (Fischbacher & Föllmi-Heusi, 2013).

Approaches that allow for the identification of DB at the individual level include ability tests such as the matrix task (Mazar et al., 2008), deception games (Vranceanu & Dubart, 2019), or unsolvable paradigms like the Difference Spotting Task (DST) (Liu et al., 2021). In the matrix task, participants are asked to find two three-digit numbers that add up to exactly ten within matrices containing twelve of those numbers in total (e.g. 6.37 + 3.63 = 10). On a separate sheet, participants then report the number of matrices they claim to have solved correctly to receive payment. Through special markings on both the test and report sheets, these can be matched, enabling the measurement of DB for each individual (Gerlach et al., 2019). A commonly overlooked drawback of the matrix task is the potential for honest mistakes (Heyman et al., 2020). Since the task requires mathematical competencies, participants may unknowingly make genuine errors, believing they solved a matrix when in fact they did not, leading to a misinterpretation of calculating errors as DB. In the unsolvable paradigms, participants are asked to complete tasks that include both solvable and unsolvable items, simply reporting whether they were able to solve them. Examples include unscrambling anagrams (Gerlach & Teodorescu, 2022), or identifying differences between two pictures (Liu et al., 2021). After the allotted time has elapsed or all trials have been completed, the number of unsolvable items a participant claims to have solved can be used as an individual measure of DB. These tasks are less prone to honest mistakes as they rely less on special competencies than the matrix task. As such, the unsolvable paradigms serve as valuable tools for studying self-concept maintenance, and context-sensitive DB.

1.2 Explaining Dishonest Behavior

Economic and psychological theories provide insights into why people engage in DB. From the economic perspective of ***homo economicus***, individuals are seen as rational actors who

weigh the potential benefits of cheating against the risks, such as being caught or damaging their self-image (Gerlach et al., 2019; Rosenbaum et al., 2014). People aim to maximize their outcomes, even if it involves some form of DB, only if the potential benefits outweigh the risks (Mazar et al., 2008). However, such considerations have not fully explained DB in various experimental settings, where individuals often refrain from cheating to the maximum extent even when substantial benefits are at stake (Grym & Liljander, 2016). A meta-analysis revealed a significant departure from this economic perspective, with subjects generally forgoing three-quarters of the potential gains, even when the financial benefits increased substantially. DB was found to be minimally affected by a 500-fold increase in payoff (Abeler et al., 2019). This suggests that individuals are influenced by factors beyond economic considerations. The social psychology perspective, with the idea of a ***homo sociologicus***, considers intrinsic norms and moral values, proposing that individuals care about how their behavior aligns with internalized ethical standards (Kroher & Wolbring, 2015; Tao & Au, 2014). Additionally, self-licensing theory indicates that some individuals may feel endorsed in engaging in DB after performing a moral act, as this positive action creates moral credit that justifies behavior conflicting with their moral values (Clot et al., 2014). This leads to the classification of three types of individuals regarding DB: those unwilling to engage in DB regardless of the benefit (ethical type), those who engage in DB without internal costs when outcomes are preferable (economic type), and those who have finite intrinsic costs for lying and adjust their behavior based on the situation (mixed type) (Kajackaite & Gneezy, 2017; Rosenbaum et al., 2014). The choice of engaging in repeated DB or not reflects a trade-off between a gain and potential reputational or self-image costs, consistent with models of lying aversion (Gneezy et al., 2013). Recent evidence further suggests that DB reflects a stable dispositional tendency (Leisge et al., 2024), and is longitudinally predicted by traits such as Honesty-Humility (Lee & Ashton, 2004) and the Dark Factor (Moshagen et al., 2018), which

predict both the occurrence and consistency of dishonesty across contexts (Thielmann et al., 2025).

This highlights a complex interplay of motivations, where DB is influenced not only by the desire for material gain but also by concerns about self-perception, maintaining a positive social image and the respective social situation (Mazar et al., 2008). Beyond reputational concerns, the availability of social justifications, such as benefiting others, can reduce internal moral costs and increase DB, particularly when paired with personal gain (Klein et al., 2017). Together, these factors are shaped by context-dependent norms and values (Akerlof, 1997; Bandura, 2002; Bursztyn & Jensen, 2016), reflecting the dual theoretical perspectives of ***homo economicus*** and ***homo sociologicus***, which together provide a comprehensive understanding of DB.

1.3 Factors influencing DB

Beyond individual characteristics such as gender, the primary factor underlying the present research question is the social environment. Specifically, we examine how variations in social context shape DB. The absence of immediate social feedback, nonverbal cues and the increased anonymity of online platforms could lead to a higher prevalence of dishonesty in such tasks (Cartwright & Xue, 2020; Lieberman & Schroeder, 2020). Unlike face-to-face interactions, where social pressure and non-verbal cues reinforce honest behavior, online settings may reduce the perceived risk of being caught or judged by others, thereby encouraging dishonest actions (Cohn et al., 2022). This is summarized within the theory of social distance. Social distance can be defined as the degree of perceived remoteness (physical and emotional) that subjects believe exists (Hoffmann et al., 1996). Since a laboratory setting allows for identification and is less anonymous, it results in a closer perceived social distance. Here, participants are identified by experimenters or social peers, therefore reducing emotional and social distance and encouraging norm-confirmative

behavior (Dickinson & McEvoy, 2020). In contrast, online environments incorporate a higher anonymity that increases social distance and therefore reduces norm compliance, accountability, and concern for self-perception or punishment when engaging in DB (Varvarigos & Xin, 2020). This shift towards self-interest, diminished social control and anonymity seems to alter behavior in remote settings (Waeber, 2021). Recent findings suggest that not only the fear of sanctions or punishments but also the mere physical presence of others can significantly influence DB, by heightening reputational concerns and increasing public self-awareness (Köbis et al., 2019; Nieper et al., 2025; van Bommel et al., 2012). Physical presence (reduced social distance) may act as a subtle yet powerful deterrent to DB. Unlike symbolic cues such as eye images (Cai et al., 2015) actual human presence appears to activate internalized moral norms more effectively (Oda et al., 2015; Pfattheicher et al., 2019). Adding to this complexity, cognitive models propose that dishonesty requires more mental effort than honesty (Brocas & Carrillo, 2019; Suchotzki et al., 2017; Verschuere et al., 2017). When observation of individuals is possible in in-person environments, the increased cognitive load and fear of social judgment may encourage honesty, even when DB provides a benefit.

Lilleholt et al. (2020) used computerized and non-computerized versions of the coin-toss task, in which participants were either informed of being monitored or not. The study found that awareness of monitoring significantly decreased DB compared to the external computerized coin-toss condition (Lilleholt et al., 2020). This further suggests that participants are concerned with the reputational costs of being perceived as dishonest (Abeler et al., 2019; Kajackaite & Gneezy, 2017). Thus, the question arises about how different environments influence ethical decision-making, especially as online interactions become more common and central to modern life.

Empirical research on differences in DB between online and in-person environments is inconclusive. Studies on self-reported academic dishonesty reveal mixed results (Holden et al., 2021), with some showing higher levels in online settings (Janke et al., 2021; King et al., 2009; Miller & Young-Jones, 2012), others presenting higher levels in in-person settings (Kidwell & Kent, 2008; Stuber-McEwen et al., 2009), and some finding no significant difference (Arnold, 2022; Ladyshewsky, 2015; Yazici et al., 2023). Experimental studies provide a more consistent direction. For instance, Dickinson and McEvoy (2020) used a modified coin-flip task to assess DB at the aggregate level, comparing identifiable participants in both online and in-person settings with fully anonymous online participants recruited via Amazon Mechanical Turk (mTurk), a widely-used platform for online crowdsourcing. While switching settings within the same participant pool increased fake effort (e.g., likely not flipping the coin), it did not result in more DB in the coin-flip task. In contrast, the socially distant and anonymous mTurk participants exhibited the highest levels of DB (Dickinson & McEvoy, 2020). Similarly, a die-roll task was used by Kroher and Wolbring (2015) to measure DB online and in-person at the aggregate level. Their between-subjects design revealed that participants in both conditions engaged in DB, with more cheating for participants in the online condition (Kroher & Wolbring, 2015). Via testing an individual decision-making situation in a stock market scenario, the between-subjects design by Waeber (2021) suggested no difference in DB between online and in-person settings. However, when gender was considered, men were found to be more dishonest online compared to in-person, while no difference was observed for women (Waeber, 2021). Extending these findings, Leisge et al. (2025) employed a repeated-measures design using a fine motor tracing task to assess DB across four sessions in online versus in-person environments. Results showed that DB was significantly higher among men in the online

compared to the in-person condition, and increased over time, whereas women's behavior remained stable across conditions (Leisge et al., 2025).

Based on these theoretical foundations and the empirical results presented, we hypothesize that the occurrence and extent of DB will be higher in online compared to in-person environments.

Gender has been discussed as a potential factor influencing DB, though findings remain mixed. Several studies suggest that men may engage in DB more frequently than women, particularly when personal gain is involved (Gerlach et al., 2019; Grosch & Rau, 2017; Kennedy & Kray, 2022; Muñoz García et al., 2021). Meta-analytic evidence also indicates that men are more likely to tell both self-serving and altruistic lies (Capraro, 2018). However, other research has found no consistent gender differences, with results varying depending on task design, reward structure, and contextual factors (Chowdhury et al., 2021; Ezquerra et al., 2018; Tyler et al., 2006). These inconsistencies suggest that gender effects on DB are likely context-dependent and moderated by situational cues and individual beliefs (Grosch et al., 2022; Kennedy & Kray, 2022; Lohse & Qari, 2021).

Based on these results, we preregistered an exploratory hypothesis that gender may further influence DB and interact with the social context. Accordingly, we hypothesize that gender affects the occurrence and extent of DB across the two settings.

2 Materials and Methods

2.1 Participants

The main hypothesis concerning the difference in DB between online and in-person settings, as well as the analyses of this study, were preregistered (https://aspredicted.org/gbcs-d4xb.pdf). The preregistration included an a-priori sample size estimation using GPower (Faul et al., 2009) for the difference between online and in-person conditions. Power was set

to 0.80 and sample size to detect a medium effect (d = 0.5) with a significance level of 0.05 was estimated at 64 participants per condition.

A between-subjects design was used to test a total of 144 students who participated in either an online (n = 71) or an in-person (n = 63) environment. The gender distribution was nearly balanced across both conditions. In the online condition, 37 participants were female (52%) aged 20 to 27 years (M = 22, SD = 2) and 34 were male (48%) between the ages of 19 and 32 (M = 23, SD = 3). The in-person condition included 33 females (52%) aged 18 to 31 years (M = 21, SD = 3) and 30 males (48%) between the ages of 18 and 35 (M = 22, SD = 3). All participants had normal or corrected-to-normal vision. Participants were recruited through self-selection from the participant pool of the sport science institute of Saarland University, which mainly consists of sport and some psychology students. The only exclusion criterion specified was that participants who took part in the in-person condition were not eligible for the online version of the experiment and vice-versa. The assignment to the online and in-person conditions was not randomized due to the non-simultaneous nature of data collection, which was conducted in separate phases. Participants did not choose which condition to participate in, but rather, they self-selected into the study as a whole and were assigned to the condition available at the time of their participation. This approach ensured that participants did not actively select their preferred condition, thereby minimizing selection bias.

Prior to data collection, potential participants received an email with a brief description. The timeframe and location for data collection in the online condition were flexible and determined by each participant, while all testing sessions in the in-person environment were conducted individually in the laboratory of the sport science institute of Saarland University. Informed consent was obtained from all participants before testing, and participants were assured that their data would be anonymized and treated confidentially in subsequent analyses. The study received approval from the ethics committee of Saarland University. Two

participants from the in-person condition were excluded from all analyses due to instruction non-compliance.

2.2 Procedure – Data Collection

To mask the true purpose of the study, a plausible cover story was implemented. Participants were led to believe that the experiment focused on cognitive learning, and that the initial task functioned merely as a training phase for a subsequent test of visual search ability. In line with this narrative, a computerized visual search task was introduced, featuring 10 trials of image pairs. Each pair contained exactly 10 differences, and participants had 30 seconds per trial to identify and mark as many differences as possible. They were informed that this task represented the core focus of the study and would serve as the primary performance metric. To strengthen this belief and encourage active participation, participants received a financial incentive of 2 cents for each correctly marked difference. This setup was designed to draw attention away from the study's actual interest in decision-making behavior during the DST. However, as this task was irrelevant to the study's outcomes and did not yield insights into the research objectives, it is not discussed further.

Test sessions for both the online and in-person conditions were designed to last approximately 60 minutes. The in-person data collection was part of a broader research initiative that focused on the intrapersonal stability of DB (see Leisge et al., 2024). Participants in the in-person condition were invited to the laboratory at the sport science institute, where they completed different tasks in a controlled setting with only the experimenter present. During the DST assessment, which included tasks on DB and visual search ability, the experimenter remained in the room, but was neither visible to the participants nor able to view their computer screens. However, the mere possibility of being monitored, combined with the experimenter's presence, may have reduced participants' sense

of anonymity and decreased perceived social distance. In contrast, participants in the online condition were not restricted by specific times or locations for completing the study tasks. Since physical oversight was not possible, the level of supervision in the online setting was considerably lower, resulting in greater anonymity and larger social distance. Please note that differences between the online and in-person conditions (e.g. the presence of an experimenter or flexible timing) were not unintended confounds but essential features of the experimental manipulation. The in-person condition required physical presence to examine the influence of social presence and observability, while the online condition was deliberately designed to maximize anonymity and social distance, therefore eliminating social presence of the experimenter. Restricting the online environment (e.g., by enforcing fixed times or artificial monitoring) would have undermined the ecological validity of the comparison.

The DST was administered using SoSci Survey (Leiner, 2024) and JavaScript, and was not accessible via mobile phones or tablets to maintain comparability with the in-person laboratory setting. Online participants were instructed to work independently without anyone else present and to focus solely on the study materials without external distractions. To ensure consistency in the size of the picture pairs used in the DST, pixel counts were standardized.

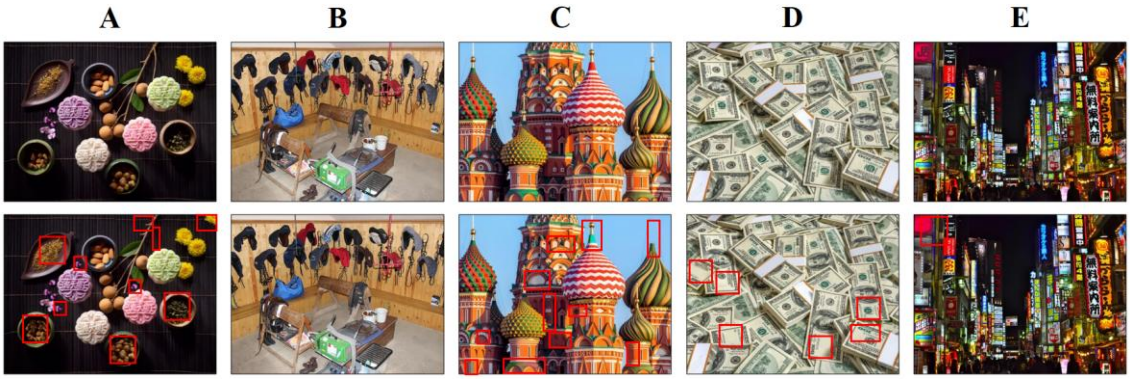
Both groups began by answering computer-based questionnaires that collected personal information such as gender, age, use of visual aids, and sporting background, followed by assessments of additional psychometric data (see Supplement). The DST and the visual search task were administered thereafter. For the online condition, a feedback loop was incorporated. After reading the instructions and completing a practice trial, participants were prompted to confirm their understanding of the task and instructions. They had the option to proceed with the data collection or revisit the instructions and practice trials if needed.

2.3 Measures and Covariates

This study used the Difference Spotting Task (DST), a cognitive measure developed by Liu et

al. (2021) to assess DB at both the item and individual level. The DST is a non-verbal task, making it broadly applicable across different populations regardless of linguistic or mathematical proficiency (Liu et al., 2021). The computer version of the task asks participants to identify differences between two similar images. Unbeknownst to them, only half of the image pairs (40 out of 80) actually contain differences, while the other half contains no differences at all (see Figure 1 A, B). However, participants were instructed that each pair of images could vary in difficulty and was therefore either categorized as “easy” including ten differences, “medium” with six differences, or “hard” with one difference (see Figure 1 C-E).

Figure 1. *Examples of the visual stimuli used in this study (Adapted from Liu et al., 2021)*



Note. (A) Example of an original stimulus pair in solvable items. (B) Example of an original stimulus pair in “unsolvable items,” containing no differences. Participants were instructed that there would be two additional difficulty levels besides (C) “easy” (10 differences), namely (D) “medium” with six differences, and (E) “hard” with one difference. Note, however, that the instructions differed from the actual stimulus pairs. Differences between the target stimuli are highlighted by red boxes for illustration purposes.

During each trial, participants were asked to indicate whether they had spotted any difference by selecting "✓ Yes" or " ✗ No," without further specifying the differences. They were encouraged to double-check their responses and only confirm a difference if they were completely certain. The measure of the extent of DB was the number of “✓ Yes” responses in the unsolvable trials, where claiming to have spotted a difference was attributed to dishonesty, while the occurrence of DB was operationalized as reporting at least one “✓ Yes” on

unsolvable trials. A timeline illustrating a single trial is shown in Figure 2. The image pairs were presented in randomized order to prevent sequence effects. To minimize the potential for honest mistakes and to ensure task reliability, subjects were given a 60-second break after 40 trials. As an incentive for DB, participants received 3 cents per solved pair ("Yes" response). Subjects in the online and in-person condition completed the same version of this task. The DST provides a structured, incentivized experimental environment akin to classical behavioral games, yet with the novel advantage of trial-by-trial resolution at the individual level.

Figure 2. *Sequence of events in a single trial in the DST with example rewards for a "yes" response (Adapted from Liu et al., 2021)*

Note. Starting with fixation (1 s) and followed by a pair of pictures for 8 s. The subsequent "Report"-Screen was not timed. Depending on the chosen answer ("Yes" or "No") the corresponding outcome screen was shown for 1 s, indicating the gain of the 3 cents incentive.

2.4 Statistics

The statistical analysis was conducted using R Statistical Software (version 4.4.0) for Windows (R Core Team, 2022). The presence of DB for each condition and gender was tested using one-sample Wilcoxon tests by comparing the empirical values against zero. To analyse potential differences in the rates of honest (number of "✓ Yes" answers in unsolvable pairs = 0) and dishonest (number of "✓ Yes" answers in unsolvable pairs > 0) subjects across the two conditions, the preregistered generalized mixed-effects model was calculated. This allows us to analyse differences in the occurrence of DB. Following the analyses plan we then extended this model by gender (2: Male, Female). However, it should be noted that the sample size estimation was conducted solely with the main purpose in mind, namely the difference

between social environments (online vs. in-person). The analyses involving gender should therefore be considered exploratory. Following the preregistered analyses plan, the model was further extended by including psychometric variables such as Task- and Ego-Orientation (Duda & Nicholls, 1992), Social Desirability (Crowne & Marlowe, 1960) and Honesty-Humility (Lee & Ashton, 2004). Since the inclusion of these variables did not significantly influence the results, the corresponding analyses are reported only in the Supplement.

To analyze the extent of DB (i.e., the number of "Yes" responses in unsolvable trials), we followed the preregistered approach. Since introducing a random intercept did not significantly improve model fit, we used the preregistered alternative. First, we fitted a linear model including only the factor Condition (2: online, in-person). To align with the preregistered sample size estimation and to further validate the results, we additionally conducted a t-test. Because the normality assumption was violated, we also performed a non-parametric alternative. Next, we extended the model by including participants' gender, noting that this analysis should be considered exploratory, as the study was not primarily powered to detect these interaction effects. Finally, the model was further extended to include the psychometric variables (Task- and Ego-Orientation, Social Desirability, and Honesty-Humility). Since the previously observed effects did not change, we present the results of this model in the Supplementary Materials, noting that the effect of Task-Orientation reached significance.

Descriptive statistics and Cronbach's α were calculated via the psych R package (Revelle, 2022). Effect sizes were computed by using the rcompanion R package (Mangiafico, 2023). For all analyses the alpha level was set to 0.05.

3 Results

Approximately 59% of women (n = 22) and 94% of men (n = 32) in the online condition reported having found at least one difference among the 40 unsolvable picture pairs in the

DST. In the in-person setting, a total of 65% of women (n = 22) and 55% of men (n = 17) stated finding a difference in the unsolvable pictures (see Table 1 for additional descriptive statistics). The generalized logistic mixed-effects model revealed that in general, participants were significantly more likely to engage in DB in the online condition than in the in-person condition (β = -0.80, 95% CI [-1.54, -0.06], p = .034). Estimated marginal means showed a higher probability of cheating online ($\hat{p}$ = .761, 95% CI [.648, .846]) than in person ($\hat{p}$ = .587, 95% CI [.463, .701]). The odds of engaging in DB were significantly lower in person relative to online (OR = 0.45, 95% CI [0.21, 0.94]). This confirms our preregistered hypothesis about differences of the occurrence of DB in the two social settings.

To examine whether gender moderates the effect of social context on dishonest behavior, we fitted a second generalized logistic mixed-effects model including Condition, Gender, and their interaction. The model revealed no significant main effect of Condition (β = 0.18, 95% CI [−0.80, 1.16], p = .720), but a significant main effect of Gender, indicating that men were more likely to engage in DB than women (β = 2.40, 95% CI [0.77, 4.03], p = .004). Importantly, the interaction of gender and social condition was significant and negative (β = −2.83, 95% CI [−4.77, −0.89], p = .004), suggesting that the effect of social context differed by gender. Estimated marginal means showed that among men, the probability of cheating was substantially higher online ($\hat{p}$ = .942, 95% CI [.779, .987]) than in person ($\hat{p}$ = .534, 95% CI [.355, .704]), whereas among women, probabilities were similar across conditions (Online: $\hat{p}$ = .595, 95% CI [.429, .742]; In-person: $\hat{p}$ = .638, 95% CI [.457, .786]). Odds ratio contrasts confirmed this pattern. For men, the odds of cheating were over 14 times higher online than in person (OR = 14.16, 95% CI [2.16, 56.38], p = .002), whereas for women, the difference between conditions was not significant (OR = 0.84, 95% CI [0.45, 3.17], p = .720). It appears that online, only a few men resist the temptation of engaging in DB.

The analyses of presence of DB using one-sample Wilcoxon tests indicated with high effect sizes that the empirical values for men and women are significantly higher than zero for the in-person and online conditions (see Table 1). Reliability analyses for unsolvable trials (measure of DB) showed excellent internal consistency in the online ($\alpha = .95$) and in-person ($\alpha = .94$) setting, indicating that responses were highly consistent across trials. This high reliability suggests that random errors or honest mistakes were minimal and unlikely to account for systematic differences between conditions or genders.

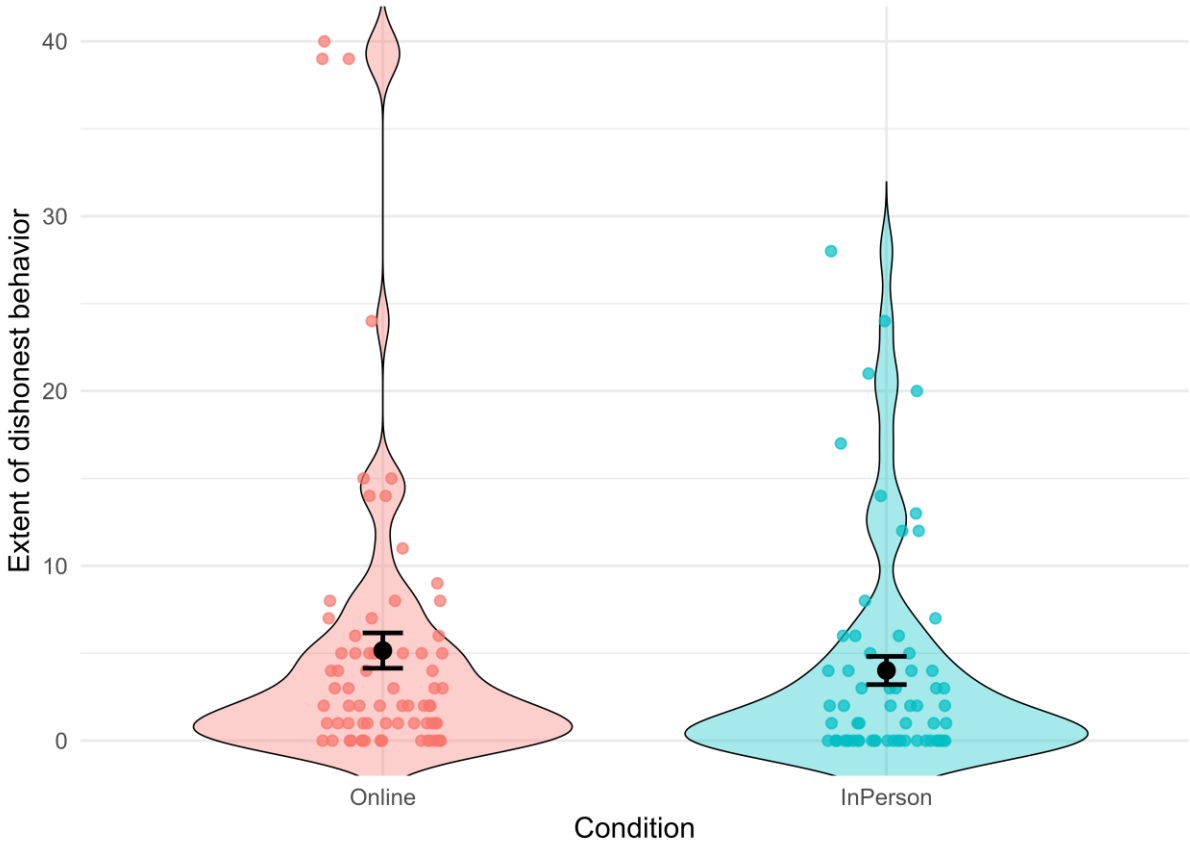
Table 1. *Dishonest Behavior is Present in Every Condition for Men and Women*

		Test Statistics				
		M	*SD*	*z*	*p*	*r*
Online	Men	7.97	11.16	-5.07	**<.001*** **	.87
	Women	2.57	3.49	-4.27	**<.001*** **	.88
In person	Men	3.3	5.21	-3.68	**<.001*** **	.88
	Women	4.67	7.33	-4.17	**<.001*** **	.88

Note. Extent of cheating (mean, standard deviation), results of one-sample Wilcoxon test (*z*-value, *p*-value), and the effect size (*r*) are presented. Significant values are highlighted in bold. *$p < .05$; **$p < .01$; ***$p < .001$.

Participants in the online condition engaged in DB with a mean of 5.15 ($SD = 8.51$), which was descriptively higher than in the in-person condition ($M = 4.02$, $SD = 6.40$; see Figure 3). The linear model analyzing the second part of the main hypothesis (i.e. differences in the extent of DB between the two social settings) explained only a small proportion of variance ($R^2 = 0.01$). Within this model, the effect of condition was not statistically significant ($\beta = -1.14$, 95% CI [-3.74, 1.46], $t_{(132)} = -0.87$, $p = .388$), leading to the rejection of the extent hypothesis.

Figure 3. Violin plot showing the distribution of DB, with no difference between conditions



Note. Individual data points are displayed as semi-transparent dots. Black circles represent the mean and vertical bars indicate ±1 standard error of the mean.

As preregistered, we then fitted a linear model to predict the extent of DB using the between-subjects factors Gender and Social Condition, as well as their interaction. While its explanatory power is small ($R^2_{adj.}$ = .06), the effect of gender is statistically significant (β = 5.40, 95% CI [1.94, 8.87], $t_{(130)}$ = 3.09, p = .002), indicating higher DB in men. The main effect of social condition failed to reach statistical significance (β = 2.10, 95% CI [-1.39, 5.59], $t_{(130)}$ = 1.19, p = .236). However, a significant and negative interaction of gender and condition is estimated (β = -6.77, 95% CI [-11.82, -1.72], $t_{(130)}$ = -2.65, p = .009). The results of follow-up Wilcoxon tests are shown in Table 3. Regarding the extent hypothesis, the results indicate a significantly higher extent of DB for men in the online condition, compared to women online (z = -3.15, p = .002, r = .37) and men in-person (z = -2.72, p = .007, r = .34, see Table 3, Figure 4). These results confirm our exploratory hypothesis that gender

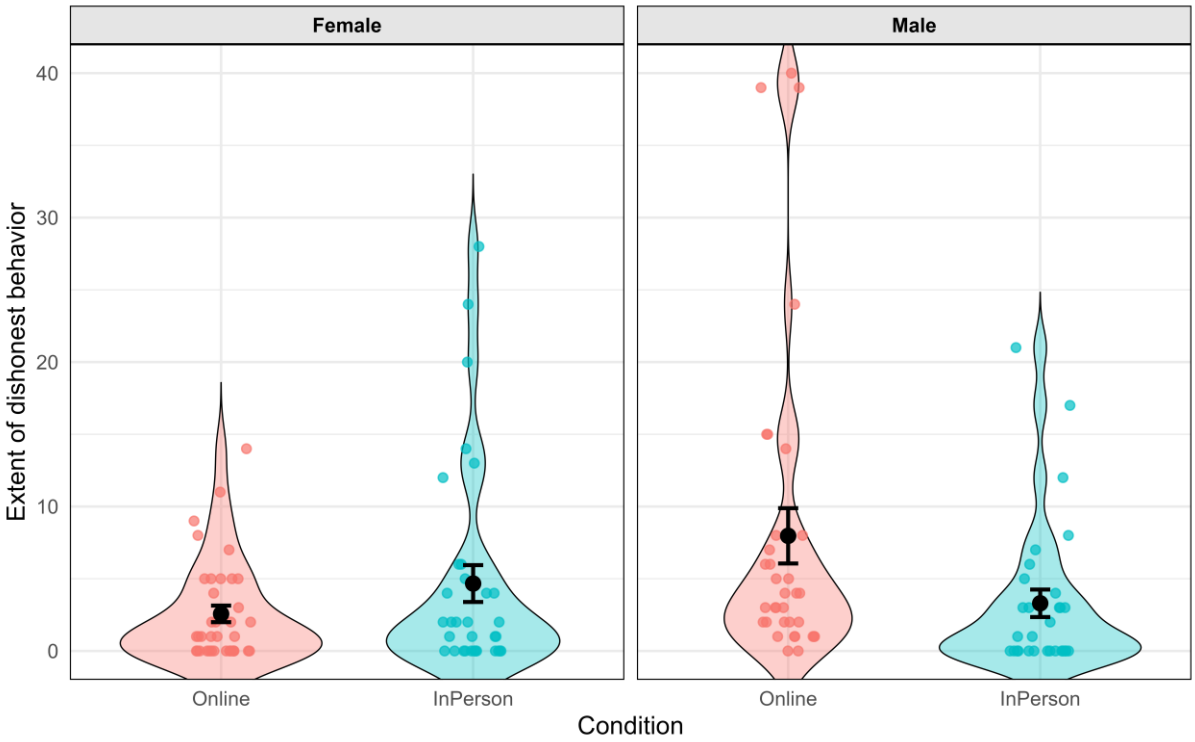
influences DB and interacts with the social context.

Table 3. *Follow-up Wilcoxon tests. Men show a higher extent of DB in the online condition*

	Test Statistics		
	z	*p*	*r*
Online - Men vs. Women	-3.15	**.002****	.38
In-Person - Men vs. Women	-0.62	.534	.08
Men - Online vs. In-Person	-2.72	**.007****	.34
Women - Online vs. In-Person	-0.71	.477	.09

Note. Significant values are highlighted in bold. *p < .05; **p < .01; ***p < .001.

Figure 4. Violin plot showing the distribution of DB for men and women in each condition with the highest extent of DB for men online



Note. Individual data points are displayed as semi-transparent dots. Black circles represent the mean and vertical bars indicate ±1 standard error of the mean.

4 Discussion

In this study, we used an experimental task to measure DB at the individual level in an online and in-person setting. Our preregistered goal was to analyse whether the extent and

occurrence of DB differs between these two social contexts. Additionally, we aimed to identify gender as an influencing factor.

4.1 Social Condition. Occurrence vs. Extent

Participants were significantly more likely to engage in DB in the online compared to the in-person condition, confirming the first part of the preregistered hypothesis on the occurrence of DB. Estimated marginal means indicated a higher probability for DB online than in-person. This pattern aligns with theories of anonymity, social distance, and reduced social presence in digital contexts (Cartwright & Xue, 2020; Lieberman & Schroeder, 2020) and converges with evidence that honesty drops when interactions lack human observers (Cohn et al., 2022; Köbis et al., 2019). This finding supports the results reported by Kroher and Wolbring (2015) and partly the pattern of Dickinson and McEvoy (2020), who observed the highest cheating when anonymity was maximized on Mturk participants.

By contrast, the extent of DB was only descriptively higher online and did not reach statistical significance in the linear model. Thus, the second part of the preregistered hypothesis (extent) is not confirmed. This is noteworthy because our occurrence result mirrors the direction of previous studies (Dickinson & McEvoy, 2020; Kroher & Wolbring, 2015). Yet our null result on the extent of DB indicates that the increase observed in the online condition is located mainly at the extensive margin (i.e. the decision to cheat at all) rather than at the intensive margin (i.e. how much to cheat). Our extension to existing literature is to separate the occurrence from the extent of DB at the individual level, showing that the first barrier to engage in DB is lower online compared to in-person.

Taken together, our data suggest that the online environment lowers the hurdle to initiate DB. This is consistent with the online disinhibition perspective, which describes how anonymity and reduced social cues in digital contexts can diminish self-regulation and increase norm-violating behavior (Suler, 2004). Additionally, observability mitigates DB

because the presence of others or even subtle cues of being watched heightens reputational concerns and public self-awareness, making DB more psychologically costly (Pfattheicher et al., 2019). The online context appears to reduce reputational concerns enough to draw more people over the threshold into DB, but self-concept maintenance mechanisms still constrain the magnitude of DB once engaged (Mazar et al., 2008). Relatedly, "moral wiggle room" and partial-lying models show that people often cheat just enough to preserve a positive moral self-view (Abeler et al., 2019; Dana et al., 2007), which can produce shifts in occurrence without large variations in the extent of DB.

4.2 Social Condition and Gender

Across the outcomes of occurrence and extent of DB, we observed significant main effects of gender (men higher in DB than women) and, crucially, a significant Condition and Gender interaction. Men showed substantially higher DB online than in-person, whereas women did not differ across settings. This pattern held for both the occurrence and the extent of DB, indicating that the online environment disproportionately increases men's dishonesty. This means that men not only showed a higher likelihood to engage in DB, but also exhibited a stronger increase in DB when moving from in-person to online settings. While women's behavior was comparable across contexts, men's DB was considerably higher online versus in-person, both in terms of deciding to engage in DB at all and in the extent of DB once engaged.

These findings are in line with prior empirical work (Leisge et al., 2025; Waeber, 2021) and with meta-analytic and narrative reviews that often place men as more likely than women to engage in DB when it pays (Capraro, 2018; Kennedy & Kray, 2022). Prior evidence also suggests men are, on average, more willing to engage in self-serving deception, particularly black lies (i.e., lies that benefit the liar at others' expense), whereas women's willingness depends more on contextual cues and social justifiability (Capraro, 2018; Grosch & Rau,

2017). One plausible explanation is that reputational and social image concerns are more salient for women than for men (Aquino & Reed, 2002; Croson & Gneezy, 2009). When external cues are weakened online, men appear less constrained by such concerns, whereas women maintain relatively stable honesty norms.

These gender differences in DB in online environments may be further shaped by a combination of social, psychological, and motivational factors. As outlined earlier, women are often more strongly oriented toward prosocial values and are more likely to internalize social norms (Eagly & Wood, 2012; Grosch & Rau, 2017). This internalization likely contributes to the sustained influence of moral standards, even in contexts characterized by minimal oversight and high anonymity. Emotional responses also appear to play a role. Research indicates that women experience greater affective discomfort when acting against moral expectations (Cohen et al., 2011), potentially raising the subjective cost of dishonest behavior. Risk sensitivity further contributes to this pattern. Although the objective risk of detection in the online condition was low, women's generally higher levels of risk aversion (Croson & Gneezy, 2009) may extend to social and reputational risks, including damage to one's self-image or alignment with internal values. In this sense, identity-based motivations, such as the desire to view oneself as moral, may act as internal deterrents (Aquino & Reed, 2002). These intrinsic concerns could carry particular weight for women, whose moral behavior is less dependent on immediate contextual cues and more tightly linked to self-concept.

Moreover, contemporary formulations of social role theory suggest that women are more likely to be socialized into communal roles, which emphasize traits such as honesty, responsibility, and concern for others (Wood & Eagly, 2012). Such socialization patterns may further reinforce resistance to exploitative behavior, even when external accountability is reduced. Thus, the relatively stable levels of dishonest behavior among women in the online

condition are unlikely to reflect a lack of opportunity, but rather a stronger internal resistance to engaging in norm violations. Women across both conditions may experience a fixed internal cost structure for DB, leading to greater resistance to strategy shifts even under different game conditions. In contrast, men's behavior appeared more reactive to the absence of social control, suggesting their dishonesty may be more situationally driven.

These findings align with broader theories of gendered moral behavior, emphasizing that women's ethical decisions are more deeply anchored in internal moral frameworks, whereas men may be more responsive to shifts in external enforcement or social setting.

Although our a-priori sample size estimation targeted the main comparison between social environments (online vs. in-person), not the interaction, we nonetheless observed convergent, statistically significant Gender and Condition interaction effects for both outcomes (occurrence and extent). This replication across outcomes, together with consistent estimated marginal means and follow-ups, suggests the interaction is not spurious, while still warranting caution and independent replication in larger samples and with preregistered power for moderation.

4.2 Limitations

This study has several limitations that should be acknowledged. First, the specific group of sport and psychology students might reduce the generalizability of the findings beyond the sample. Sport students, in particular, may exhibit elevated competitiveness and a strong drive for achievement, potentially making them more prone to strategic dishonesty in performance-oriented tasks, especially under conditions of reduced social oversight such as online settings. At the same time, sport education often promotes values like fair play, integrity, and adherence to rules, which may foster stronger internal moral standards. These opposing influences could interact in complex ways, affecting the likelihood of dishonest behavior. As

such, the specific profile of this participant group may have shaped the results in ways not representative of the broader population.

Additionally, the online condition lacked environmental control, allowing participants to complete the task at any time or location, introducing potential distractions or other external influences that could affect DB. For instance, time-of-day effects have been linked to unethical behavior (Gunia et al., 2014; Kouchaki & Smith, 2014). Additionally, we did not include direct manipulation checks of perceived anonymity or social presence to avoid introducing demand characteristics. While such measures (e.g., self-reported feelings of anonymity or observability) could provide additional validation, prior studies in this domain have similarly refrained from using them (Dickinson & McEvoy, 2020; Kroher & Wolbring, 2015; Leisge et al., 2025; Waeber, 2021). However, future research could incorporate validated manipulation checks to strengthen internal validity.

The between-subjects design is another limitation, as it prevents an assessment of individual behavioral changes across conditions. A within-subjects design would have allowed for more robust comparisons, but on the other hand sequence or testing effects could then introduce other biases. Lastly, while the DST provided a controlled measure of DB, it may not reflect the complexity of real-world settings where dishonesty occurs, limiting the ecological validity of the findings. Individual variation in task meaningfulness may influence the motivation to cheat, particularly in performance-based settings like the DST. Unlike traditional dishonesty paradigms, such as the coin flip or die roll tasks, which involve random outcomes and assess dishonesty at the aggregate level, the DST engages participants' perceptual and cognitive skills and allows for repeated, individual-level measurement. This also enables a precise analysis of cheating patterns. While our findings suggest that gender differences in dishonesty were context-sensitive, it remains possible that factors such as gender-based differences in risk perception may have shaped strategic behavior.

4.3 Conclusion and Implications

These findings offer valuable insights into the research on the impact of different social contexts (online versus in-person) and gender on DB. The results demonstrate that, while men already exhibit a greater overall propensity for dishonesty than women, anonymity and increased social distance associated with online environments appear to further amplify this behavior. This suggests that online contexts may reduce certain internal and social checks on dishonesty, such as concerns about self-image or accountability, that are more present in in-person settings, potentially allowing some individuals to engage in DB with fewer perceived consequences. As a result, the DB became more rationalizable for some participants, particularly in the absence of social sanctions.

These discrepancies between online and in-person settings may have significant implications for research and educational practices. For instance, tasks performed in online environments, whether in scientific experiments or educational assessments (e.g., online exams), may be more susceptible to DB, leading to skewed or biased outcomes.

Open Practices

Data and Analysis: The primary data and the analysis scripts are publicly available at: https://osf.io/ru8vf/?view_only=92b695efaced487d8ab00b1b857ed6ff

References

Abeler, J., Nosenzo, D., & Raymond, C. (2019). Preferences for truth-telling. *Econometrica*, *87*(4), 1115–1153. https://doi.org/10.3982/ecta14673

Akerlof, G. A. (1997). Social distance and social decisions. *Econometrica*, *65*(5), 1005. https://doi.org/10.2307/2171877

Aquino, K., & Reed, A. (2002). The self-importance of moral identity. *Journal of Personality and Social Psychology*, *83*(6), 1423–1440. https://doi.org/10.1037//0022-3514.83.6.1423

Arnold, I. J. M. (2022). Online proctored assessment during COVID-19: Has cheating increased? *The Journal of Economic Education*, *53*(4), 277–295. https://doi.org/10.1080/00220485.2022.2111384

Bandura, A. (2002). Selective moral disengagement in the exercise of moral agency. *Journal of Moral Education*, *31*(2), 101–119. https://doi.org/10.1080/0305724022014322

Brocas, I., & Carrillo, J. D. (2019). A neuroeconomic theory of (dis) honesty. *Journal of Economic Psychology*, *71*, 4–12. https://doi.org/10.1016/j.joep.2018.09.001

Burgoon, J. K., Stoner, G. A., Bonito, J. A., & Dunbar, N. E. (2003). Trust and deception in mediated communication. In *36th Annual Hawaii International Conference on System Sciences, 2003. Proceedings of the* IEEE. https://doi.org/10.1109/hicss.2003.1173792

Bursztyn, L., & Jensen, R. (2016). Social image and economic behavior in the field: identifying, understanding and shaping social pressure. *National Bureau of Economic Research*. https://doi.org/10.3386/w23013

Cai, W., Huang, X., Wu, S., & Kou, Y. (2015). Dishonest behavior is not affected by an image of watching eyes. *Evolution and Human Behavior*, *36*(2), 110–116. https://doi.org/10.1016/j.evolhumbehav.2014.09.007

Capraro, V. (2018). Gender differences in lying in sender-receiver games: A meta-analysis. *Judgment and Decision Making*, *13*(4), 345–355. https://doi.org/10.1017/s1930297500009220

Cartwright, E., & Xue, L. (2020). Lie aversion, anonymity and social distance: Are people more willing to lie using a mobile phone? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3598023

Childs, J. (2012). Gender differences in lying. *Economics Letters*, *114*(2), 147–149. https://doi.org/10.1016/j.econlet.2011.10.006

Chowdhury, S. M., Jeon, J. Y., Kim, C., & Kim, S.-H. (2021). Gender differences in repeated dishonest behavior: Experimental evidence. *Games*, *12*(2), 44. https://doi.org/10.3390/g12020044

Cohen, T. R., Wolf, S. T., Panter, A. T., & Insko, C. A. (2011). Introducing the GASP scale: A new measure of guilt and shame proneness. *Journal of Personality and Social Psychology*, *100*(5), 947–966. https://doi.org/10.1037/a0022641

Cohn, A., Gesche, T., & Maréchal, M. A. (2022). Honesty in the digital age. *Management Science*, *68*(2), 827–845. https://doi.org/10.1287/mnsc.2021.3985

Croson, R., & Gneezy, U. (2009). Gender differences in preferences. *Journal of Economic Literature*, *47*(2), 448–474. https://doi.org/10.1257/jel.47.2.448

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, *24*(4), 349–354. https://doi.org/10.1037/h0047358

Dana, J., Weber, R. A., & Kuang, J. X. (2007). Exploiting moral wiggle room: Experiments demonstrating an illusory preference for fairness. *Economic Theory*, *33*(1), 67–80. https://doi.org/10.1007/s00199-006-0153-z

Dickinson, D. L., & McEvoy, D. M. (2020). Further from the Truth: The impact of in-person, online, and Mturk on dishonest behavior. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3691399

Duda, J. L., & Nicholls, J. G. (1992). Dimensions of achievement motivation in schoolwork and sport. *Journal of Educational Psychology*, *84*(3), 290–299. https://doi.org/10.1037/0022-0663.84.3.290

Eagly, A. H., & Wood, W. (2012). Social Role Theory. In P. A. M. van Lange, E. T. Higgins, & A. W. Kruglanski (Eds.), *Handbook of Theories of Social Psychology* (pp. 458–476). SAGE Publications Ltd. https://doi.org/10.4135/9781446249222.n49

Ezquerra, L., Kolev, G. I., & Rodriguez-Lara, I. (2018). Gender differences in cheating: Loss vs. gain framing. *Economics Letters*, *163*, 46–49. https://doi.org/10.1016/j.econlet.2017.11.016

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/brm.41.4.1149

Fischbacher, U., & Föllmi-Heusi, F. (2013). Lies in disguise - an experimental study on cheating. *Journal of the European Economic Association*, *11*(3), 525–547. https://doi.org/10.1111/jeea.12014

Frenger, M., & Pitsch, W. (2021). Abweichendes Verhalten im Sport [Deviant behavior in sport]. In A. Güllich & M. Krüger (Eds.), *Sport in Kultur und Gesellschaft* (pp. 217–236). Springer Spektrum. https://doi.org/10.1007/978-3-662-53407-6_16

Gerlach, P., & Teodorescu, K. (2022). Measuring dishonest behavior: Hidden dimensions that matter. *Current Opinion in Psychology*, *47*, 101408. https://doi.org/10.1016/j.copsyc.2022.101408

Gerlach, P., Teodorescu, K., & Hertwig, R. (2019). The truth about lies: A meta-analysis on dishonest behavior. *Psychological Bulletin*, *145*(1), 1–44. https://doi.org/10.1037/bul0000174

Grolleau, G., Kocher, M. G., & Sutan, A. (2016). Cheating and loss aversion: Do people cheat more to avoid a loss? *Management Science*, *62*(12), 3428–3438. https://doi.org/10.1287/mnsc.2015.2313

Grosch, K., Müller, S., Rau, H. A., & Wasserka-Zhurakhovska, L. (2022). Selection into leadership and dishonest behavior of leaders: A gender experiment. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3682014

Grosch, K., & Rau, H. A. (2017). Gender differences in honesty: The role of social value orientation. *Journal of Economic Psychology*, *62*, 258–267. https://doi.org/10.1016/j.joep.2017.07.008

Gunia, B. C., Barnes, C. M., & Sah, S. (2014). The morality of larks and owls: Unethical behavior depends on chronotype as well as time of day. *Psychological Science*, *25*(12), 2272–2274. https://doi.org/10.1177/0956797614541989

Heyman, T., Vankrunkelsven, H., Voorspoels, W., White, A., Storms, G., & Verheyen, S. (2020). When cheating is an honest mistake: A critical evaluation of the matrix task as a measure of dishonesty. *Collabra: Psychology*, *6*(1). https://doi.org/10.1525/collabra.294

Hoffmann, E., McCabe, K., & Smith, V. L. (1996). Social distance and other-regarding behavior in dictator games. *The American Economic Review*, *86*(3), 653–660. https://doi.org/10.1017/cbo9780511528347.009

Holden, O. L., Norris, M. E., & Kuhlmeier, V. A. (2021). Academic integrity in online assessment: A research review. *Frontiers in Education*, *6*. https://doi.org/10.3389/feduc.2021.639814

Janke, S., Rudert, S. C., Petersen, Ä., Fritz, T. M., & Daumiller, M. (2021). Cheating in the wake of COVID-19: How dangerous is ad-hoc online testing for academic integrity? *Computers and Education Open*, *2*, 100055. https://doi.org/10.1016/j.caeo.2021.100055

Kajackaite, A., & Gneezy, U. (2017). Incentives and cheating. *Games and Economic Behavior*, *102*, 433–444. https://doi.org/10.1016/j.geb.2017.01.015

Kennedy, J. A., & Kray, L. J. (2022). Gender similarities and differences in dishonesty. *Current Opinion in Psychology, 48,* 101461. https://doi.org/10.1016/j.copsyc.2022.101461

Kennette, L. N., & Jelenic, M. (2023). Cheating: It depends how you define it. *Canadian Perspectives on Academic Integrity*, *5*(2), 16–33. https://doi.org/10.11575/cpai.v5i2.75649

Kidwell, L. A., & Kent, J. (2008). Integrity at a distance: A study of academic misconduct among university students on and off campus. *Accounting Education, 17*(sup1), S3-S16. https://doi.org/10.1080/09639280802044568

King, C., Guyette, R., & Piotrowski, C. (2009). Online exams and cheating: An empirical analysis of business students' views. *The Journal of Educators Online, 6*(1). https://doi.org/10.9743/jeo.2009.1.5

Klein, S. A., Thielmann, I., Hilbig, B. E., & Zettler, I. (2017). Between me and we: The importance of self-profit versus social justifiability for ethical decision making. *Judgment and Decision Making, 12*(6), 563–571. https://doi.org/10.1017/S1930297500006690

Köbis, N. C., van Prooijen, J.-W., Righetti, F., & van Lange, P. A. M. (2019). *The look over the shoulder–Corruption and cheating decreases in the presence of another person*. [Unpublished Manuscript]. https://doi.org/10.31234/osf.io/gxu96

Kouchaki, M., & Smith, I. H. (2014). The morning morality effect: The influence of time of day on unethical behavior. *Psychological Science, 25*(1), 95–102. https://doi.org/10.1177/0956797613498099

Kroher, M., & Wolbring, T. (2015). Social control, social learning, and cheating: Evidence from lab and online experiments on dishonesty. *Social Science Research, 53,* 311–324. https://doi.org/10.1016/j.ssresearch.2015.06.003

Ladyshewsky, R. K. (2015). Post-graduate student performance in ‘supervised in-class’ vs. ‘unsupervised online’ multiple choice tests: Implications for cheating and test security. *Assessment & Evaluation in Higher Education*, *40*(7), 883–897. https://doi.org/10.1080/02602938.2014.956683

Lee, K., & Ashton, M. C. (2004). Psychometric Properties of the HEXACO Personality Inventory. *Multivariate Behavioral Research*, *39*(2), 329–358. https://doi.org/10.1207/s15327906mbr3902_8

Leisge, K., Heggenberger, A., Kaczmarek, C., Pitsch, W., & Schaefer, S. (2025). Tracing the lines of deceit. Male cheating behavior increases in online versus face-to-face environments over time. *Acta Psychologica*, *259*, 105373. https://doi.org/10.1016/j.actpsy.2025.105373

Leisge, K., Kaczmarek, C., & Schaefer, S. (2024). How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior. *Frontiers in Psychology*, *15*, 1297058. https://doi.org/10.3389/fpsyg.2024.1297058

Lieberman, A., & Schroeder, J. (2020). Two social lives: How differences between online and offline interaction influence social outcomes. *Current Opinion in Psychology*, *31*, 16–21. https://doi.org/10.1016/j.copsyc.2019.06.022

Lilleholt, L., Schild, C., & Zettler, I. (2020). Not all computerized cheating tasks are equal: A comparison of computerized and non-computerized versions of a cheating task. *Journal of Economic Psychology*, *78*, 102270. https://doi.org/10.1016/j.joep.2020.102270

Liu, J., Shen, Q., Zhang, J., Beyens, U., Cai, W., Decety, J., & Li, H. (2021). The Difference Spotting Task: A new nonverbal measure of cheating behavior. *Behavior Research Methods*, *53*(5), 1935–1944. https://doi.org/10.3758/s13428-020-01526-w

Loewen, P. J., Dawes, C. T., Mazar, N., Johannesson, M., Koellinger, P., & Magnusson, P. K. (2013). The heritability of moral standards for everyday dishonesty. *Journal of Economic Behavior & Organization*, *93*, 363–366. https://doi.org/10.1016/j.jebo.2013.05.001

Lohse, T., & Qari, S. (2021). Gender differences in face-to-face deceptive behavior. *Journal of Economic Behavior & Organization*, *187*, 1–15. https://doi.org/10.1016/j.jebo.2021.03.026

Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. *Journal of Marketing Research*, *45*(6), 633–644. https://doi.org/10.1509/jmkr.45.6.633

Miller, A., & Young-Jones, A. D. (2012). Academic integrity: Online classes compared to face-to-face classes. *Journal of Instructional Psychology*, 39(3-4).

Muñoz García, A., Gil-Gómez de Liaño, B., & Pascual-Ezama, D. (2021). Gender differences in individual dishonesty profiles. *Frontiers in Psychology*, *12*, 728115. https://doi.org/10.3389/fpsyg.2021.728115

Nieper, A. S., Beersma, B., Dijkstra, M. T. M., & van Kleef, G. A. (2025). When and why does observability increase honesty? The role of gossip and reputational concern. *Judgment and Decision Making*, *20.* https://doi.org/10.1017/jdm.2024.10

Oda, R., Kato, Y., & Hiraishi, K. (2015). The watching-eye Effect on prosocial lying. *Evolutionary Psychology*, *13*(3). https://doi.org/10.1177/1474704915594959

Pascaru-Goncear, V. (2023). Determining causes of deviant behavior in students. *Revista Romaneasca Pentru Educatie Multidimensionala*, *15*(3), 98–106. https://doi.org/10.18662/rrem/15.3/756

Pfattheicher, S., Schindler, S., & Nockur, L. (2019). On the impact of Honesty-Humility and a cue of being watched on cheating behavior. *Journal of Economic Psychology, 71*, 159–174. https://doi.org/10.1016/j.joep.2018.06.004

Pitsch, W., & Emrich, E. (2012). The frequency of doping in elite sport: Results of a replication study. *International Review for the Sociology of Sport, 47*(5), 559–580. https://doi.org/10.1177/1012690211413969

Ring, C., & Kavussanu, M. (2018). The impact of achievement goals on cheating in sport. *Psychology of Sport and Exercise, 35*, 98–103. https://doi.org/10.1016/j.psychsport.2017.11.016

Rosenbaum, S. M., Billinger, S., & Stieglitz, N. (2014). Let's be honest: A review of experimental evidence of honesty and truth-telling. *Journal of Economic Psychology, 45*, 181–196. https://doi.org/10.1016/j.joep.2014.10.002

Stuber-McEwen, D., Wiseley, P., & Hoggatt, S. (2009). Point, click, and cheat: Frequency and type of academic dishonesty in the virtual classroom. *Online Journal of Distance Learning Administration, 12*(3).

Suchotzki, K., Verschuere, B., van Bockstaele, B., Ben-Shakhar, G., & Crombez, G. (2017). Lying takes time: A meta-analysis on reaction time measures of deception. *Psychological Bulletin, 143*(4), 428–453. https://doi.org/10.1037/bul0000087

Suler, J. (2004). The online disinhibition effect. *Cyberpsychology & Behavior: The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society, 7*(3), 321–326. https://doi.org/10.1089/1094931041291295

Tyler, J. M., Feldman, R. S., & Reichert, A. (2006). The price of deceptive behavior: Disliking and lying to people who lie to us. *Journal of Experimental Social Psychology, 42*(1), 69–77. https://doi.org/10.1016/j.jesp.2005.02.003

van Bommel, M., van Prooijen, J.-W., Elffers, H., & van Lange, P. A. (2012). Be aware to care: Public self-awareness leads to a reversal of the bystander effect. *Journal of Experimental Social Psychology*, *48*(4), 926–930. https://doi.org/10.1016/j.jesp.2012.02.011

Verschuere, B., Köbis, N. C [Nils C.], Bereby-Meyer, Y., Rand, D., & Shalvi, S. (2017). Taxing the brain to uncover lying? Meta-analyzing the effect of imposing cognitive load on the reaction-time costs of lying. *Journal of Applied Research in Memory and Cognition*, *7*(3), 462–469. https://doi.org/10.1016/j.jarmac.2018.04.005

Vranceanu, R., & Dubart, D. (2019). Deceitful communication in a sender-receiver experiment: Does everyone have a price? *Journal of Behavioral and Experimental Economics*, *79*, 43–52. https://doi.org/10.1016/j.socec.2019.01.005

Waeber, A. (2021). Investigating dishonesty-does context matter? *Frontiers in Psychology*, *12*, 684735. https://doi.org/10.3389/fpsyg.2021.684735

Wang, S., & Chen, T. (2021). When and why contexts predict unethical behavior: Evidence from a laboratory bribery game. *Frontiers in Psychology*, *12*, 675319. https://doi.org/10.3389/fpsyg.2021.675319

Whisman, M. A., & Snyder, D. K. (2007). Sexual infidelity in a national survey of American women: Differences in prevalence and correlates as a function of method of assessment. *Journal of Family Psychology*, *21*(2), 147–154. https://doi.org/10.1037/0893-3200.21.2.147

Yaniv, G., Greenberg, D., & Siniver, E. (2019). Telling an impossible lie: Detecting individual cheating in a die-under-the-cup task. *Review of Behavioral Economics*, *6*(2), 119–131. https://doi.org/10.1561/105.00000100

Yazici, S., Yildiz Durak, H., Aksu Dünya, B., & Şentürk, B. (2023). Online versus face-to-face cheating: The prevalence of cheating behaviours during the pandemic compared

to the pre-pandemic among Turkish University students. *Journal of Computer Assisted Learning*, *39*(1), 231–254. https://doi.org/10.1111/jcal.12743

Anhang 4: Beitrag 4

Leisge, K., Welsch, L., Pitsch, W., & Schaefer, S. (in Druck). Framing effects and social context as determinants of dishonest behavior. *Discover Psychology*. https://doi.org/ 10.1007/s44202-025-00494-6

Framing Effects and Social Context as Determinants of Dishonest Behavior

Kai Leisge[1], Luisa Welsch[1], Werner Pitsch[1] & Sabine Schaefer[1]

[1] Institute of Sport Sciences, Saarland University, Saarbrücken, Germany.
Corresponding author: Kai Leisge; E-Mail: Kai.Leisge@uni-saarland.de

Data Availability Statement. The data, codebook and the analyses scripts that support the findings of this study are openly available in OSF at https://osf.io/hmqgd/?view_only=5a6b631a719849f9bdae8c38eb7e5372

Preregistration. The main hypothesis concerning the framing effect (gain – loss) on DB, and the exploratory interaction with gender, as well as the experimental design, and the planned statistical analyses were preregistered prior to data collection (https://aspredicted.org/rkd6-34j7.pdf).

Funding statement. The authors disclosed receipt of the following financial support for the research and publication of this article: This work was funded by Saarland University (salary).

Ethic approval statement. The study was approved by the ethics committees of Heidelberg University and Saarland University. Informed consent was obtained from all participants before testing, and participants were assured that their data would be anonymized and treated confidentially in subsequent analyses. All procedures performed in this study involving human participants were in accordance with the Helsinki Declaration.

Conflict of interest statement. All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

Clinical trial number: Not applicable.

Consent to Publish declaration: Informed consent was obtained from all individual participants included in the study.

Abstract

This study investigates how framing (gain vs. loss), social context (online vs. in-person) and gender influence dishonest behavior (DB). Based on Prospect Theory and Social Distance Theory, we hypothesized that loss framing and online settings would increase DB. A total of 238 participants completed the Difference Spotting Task, under both framing conditions in either an online or in-person setting. Contrary to the hypothesis, framing had no significant effect on DB, suggesting that loss aversion does not universally drive cheating, potentially due to context-dependent factors like task design or low stakes. In contrast, DB was significantly higher in online settings, supporting the role of anonymity and social distance in reducing norm adherence. While women cheated more frequently, no significant gender differences were found in the extent of DB or its interaction with other factors. Social context appears more influential than framing in shaping DB.

Keywords: Dishonesty, Cheating, Loss Aversion, Framing, Online and In-Person, Gender

Introduction

Imagine a context in which you achieve a significant and highly regarded title, such as in the realm of sports, or accomplish a momentous achievement in your profession. As the subsequent season or period approaches, however, the threat of losing that achievement becomes increasingly prominent. This threat may arise from a decline in one's own performance or from competitors' improvements. Now, compare the joy experienced upon winning the title with the fear of losing it. What actions might one take to avoid such a loss? How far would one go to preserve a victory or reclaim the euphoria of success?

Lance Armstrong, a multiple Tour de France winner, addressed a similar dilemma in an interview. It is mentioned that he "… was simply determined to do whatever it took to win. He believed it was impossible to win the Tour de France without doping, so he doped, which meant he had to lie about doping to keep on winning" [1]. In this case, the joy of winning this prestigious event through honest means was overshadowed by the fear of losing the title, ultimately leading to deviant behavior such as doping and physical or mental intimidations against opponents [1]. This process, however, is not limited to significant milestones but also extends to smaller, everyday situations. For example, consider the emotional response to purchasing a common product on sale, thereby "gaining" the price difference, compared to buying the same item at a suddenly increased price, resulting in an additional "loss". Which scenario is more aversive? While this example highlights an emotional contrast between the joy of gain and the fear of loss, its' purpose is to illustrate the broader principle of Prospect Theory's concept of loss aversion. Importantly, although loss aversion is often accompanied by emotional reactions, the current study does not seek to measure or manipulate affect directly.

Theoretical Framework – Prospect Theory and Dishonesty

The Prospect Theory, introduced by Kahneman and Tversky (1979), provides a theoretical framework for understanding such discrepancies in emotional weight. It highlights the psychological impact of losses compared to gains, emphasizing that losses loom larger and are experienced more intensely than equivalent gains [2]. This principle, known as loss aversion, influences decision-making by driving individuals to prioritize avoiding losses over acquiring gains [3, 4]. Central to Prospect Theory is the idea that individuals evaluate outcomes relative to a reference point, typically their status quo or expected outcome [2]. Gains and losses are thus interpreted as deviations from this baseline.

Loss aversion has been shown to drive behavior across various contexts, from ethical dilemmas to affective forecasting, where individuals often overestimate the emotional impact of anticipated losses [5, 6]. Additionally, framing decisions in terms of potential losses rather than gains can significantly alter choices, amplifying the motivation to avoid losses [4, 7]. Applied to ethical decision-making, this suggests that individuals might be more willing to engage in dishonest behavior (DB) when attempting to avoid a loss than when pursuing an equivalent gain. Prospect Theory has been applied to ethical decision-making by suggesting that individuals may justify DB to avoid perceived losses [8, 9]. However, most of these studies have used between-subjects designs [6, 8–11], which can be susceptible to interindividual variability. Recent critiques of loss aversion distinguish between a “strong” form, where losses consistently outweigh gains, and a “weak” form, which acknowledges context-dependent effects [12]. It has also been argued that the magnitude of stakes influences loss aversion effects. For small monetary outcomes, gains may sometimes loom larger than losses [13], complicating straightforward predictions.

The present study addresses these concerns by applying a within-subject design, allowing for more precise measurement of framing effects on DB at the individual level. Additionally, we test whether such framing effects generalize to low-stakes and non-consequential tasks, by using modest financial incentives. This offers a valuable test case for the applicability of Prospect Theory's loss aversion to DB in low-stakes environments, helping clarify the boundary conditions of loss aversion's predictive power.

The following sections integrate insights from social psychology and economics to establish a theoretical foundation for understanding why individuals engage in DB, along with a brief description of experimental methods commonly used to assess it. This is followed by a review of empirical findings on the effect of loss aversion on DB, along with studies examining how social context and gender shape DB and moderate the effect of loss aversion.

Why do individuals engage in DB?

Economic and social psychology perspectives offer complementary insights into DB. The economic view, based on the concept of *homo economicus*, posits that individuals rationally compare the benefits of cheating against its costs, such as the fear of detection or punishment [14, 15]. It suggests that DB occurs only when material incentives outweigh these costs. However, a meta-analysis revealed that people often refrain from cheating maximally, even when the potential benefits are significantly increased [16]. This challenges a purely economic explanation. In contrast, the social psychology perspective, with *homo sociologicus*, highlights the role of internal norms and intrinsic costs of DB, proposing that individuals are motivated by how their behavior aligns with moral values and ethical standards [17–

19]. Self-licensing theory adds to this perspective by categorizing individuals as ethical (avoiding DB entirely), economic (experiencing no intrinsic costs), or mixed types (balancing finite intrinsic costs) [20], with the extent of DB remaining relatively consistent across tasks at an intrapersonal level [21]. Together, these frameworks suggest that DB is influenced by both material incentives and self-perception, shaped by ethical principles and situational norms [22]. It is important to emphasize that homo oeconomicus and homo sociologicus are theoretical ideal types that simplify reality to highlight specific behavioral tendencies. Real human behavior, however, is far more complex and cannot be fully captured by models based solely on economic rationality or social role conformity [23, 24].

Experimental Tasks to Measure DB

Measuring DB is challenging due to its reliance on violating norms and participants' reluctance to admit or display it openly. Aggregate-level methods, such as coin-flip [25] or die-roll tasks [26], measure DB by comparing reported outcomes to expected statistical distributions, ensuring anonymity but preventing links to individual traits [18]. However, there are also adaptations of these tasks that allow DB to be measured at the individual level. For instance, the die-roll task can be conducted using a Bluetooth-enabled die, which transmits the actual outcome to a device [27], or with the use of a hidden camera [28]. Classic Individual-level measures include, but are not limited to, deception games [29], ability tests like the matrix task [14] and unsolvable paradigms [9]. Deception games, such as sender-receiver games, assess DB by analyzing how participants choose between truthfully or deceptively communicating information to influence the receiver's decision [30]. The matrix task compares self-reported mathematical performance with actual

results but is prone to honest mistakes due to miscalculations [31]. Unsolvable paradigms reduce such errors by using tasks designed to have no solution, offering more reliable insights into individual level DB [32].

Literature Review – DB and Loss Aversion

The empirical evidence regarding the effect of loss aversion on DB is inconsistent. Several studies report that loss-framing leads to heightened DB [10, 11, 33, 34]. For example, Cameron and Miller (2009) found that in an unsolvable anagram task participants were more likely to cheat under a loss frame compared to a gain frame [9]. Similarly, Schindler and Pfattheicher (2017), using an aggregate-level measure to asses DB, reported that participants in a loss-framed die-roll task showed significantly higher DB compared to a gain-framed scenario [8]. Steinel et al. (2022) proposed a more detailed result by using a modified version of the die-roll task [35]. They found that participants in the loss frame used major lies, while in the gain condition more modest lies were present. These results align with the broader theory-driven findings that losses loom larger than gains [36]. Gender and individual differences further moderate these effects. Men appear to respond more strongly to loss frames than women [10], and power dynamics amplify cheating under loss frames [37]. Contrasting findings, however, complicate this narrative [6, 38, 39]. For example, Charness et al. (2019) and Ezquerra et al. (2018) used a die-roll task to assess DB but found no evidence of loss aversion for males or females [40, 41]. Few studies even suggest that gain framing can elicit greater DB under specific conditions. Harinck et al. (2007) argued that for small monetary amounts, gains often loom larger than losses, prompting individuals to cheat to secure even modest

rewards [13]. These findings challenge the universality of loss aversion effects on DB.

In sum, while loss framing often increases DB, the empirical results are nuanced, context-dependent and conflicting. Factors such as task type, reward magnitude, individual characteristics, and framing implementation can influence outcomes, warranting further investigation to reconcile these mixed findings. Nonetheless, based on Prospect Theory's loss aversion, which suggests that losses have a greater psychological impact than gains, we hypothesize that DB will be higher in a loss frame than in a gain frame, as individuals seek to minimize emotional distress.

Literature Review – DB and Social Setting and Gender

While Prospect Theory's loss aversion provides the foundation for the study's main hypothesis regarding framing effects, DB is also shaped by social and contextual factors. The transition from laboratory to online settings significantly alters behavior by influencing the norms individuals follow [42]. Social distance theory explains these differences by the perceived remoteness (both locational and emotional) between individuals [43]. In face-to-face environments, reduced anonymity and the presence of authority figures, peers, and social cues lead to closer social distance, reinforcing norm compliance and accountability [44]. This aligns with the concept of social presence, defined as the sense of being with another individual [45], which leads subjects to adjust their behavior in socially desirable ways [46]. Conversely, the anonymity of online settings increases social distance by eliminating social presence and therefore reducing the perceived risk of

being caught or judged while encouraging self-interest-driven behavior, which may weaken self-control against DB [47].

Empirical findings on the influence of social distance in online versus in-person settings remain mixed. Cohn et al. (2022) tested the same participant pool in a coin-flip task and found that a shift in environments does not affect the prevalence of DB [48]. In contrast, Kroher and Wolbring (2015) found greater cheating in an online die-roll task than in-person [49]. However, Waeber (2021) provided a more nuanced perspective, reporting no systematic differences in DB across social settings using a decision-making task via a stock market scenario [50]. Notably, men were more dishonest online, while no differences were observed for women. These findings align with theories of social distance, social presence and norm enforcement, which propose that monitoring or the sense of being monitored [51], as well as the perceived degree of anonymity and proximity of others can influence DB. Following these insights, it is hypothesized that DB is higher in online contexts, where external social constraints are attenuated and internal cost-benefit calculations may dominate.

From the perspective of Prospect Theory, social setting may further moderate the perceived salience of gains and losses. In anonymous, online environments, individuals may feel freer to act in self-interest and might be more motivated to avoid losses when the risk of reputational damage is low. In contrast, in socially monitored environments, such as in-person settings, the social cost of DB may counteract the psychological pull of loss aversion. To the best of our knowledge, no prior research has investigated whether social context moderates the effect of loss aversion on DB. Therefore, the current study additionally examines this potential interaction on an exploratory basis.

In addition to social context, individual characteristics, particularly gender may shape how people respond to gain and loss frames. Prior research on the main effect of gender on DB, has produced mixed results. While many studies suggest men are more likely to engage in DB than women [15, 52, 53], others report no gender differences [41, 54] or even higher levels of dishonesty among women in specific scenarios [55, 56]. Gender differences in DB may be attributed to general differences between men and women, like socialization patterns and prosocial orientations [53, 57], moral licensing and trustworthiness [58], or competitiveness [59].

Prospect Theory's loss aversion offers a potential lens to interpret these discrepancies. For instance, men may be more responsive to loss-framing in competitive or instrumental contexts, while women may weigh social and moral costs more heavily. By additionally exploring gender differences across framing, the present study seeks to better understand how these variables interact in shaping DB. Notably, most research on loss aversion and DB have not systematically examined gender as a moderating factor [8, 9, 11, 34, 39, 40]. One of the few studies that addressed this question is Ezquerra et al. [41], who employed the die-roll task and found that although both men and women engage in DB under gain and loss frames, there are no significant gender differences within each framing condition.

The current study addresses this gap by exploratorily testing whether gender interacts with framing, therefore offering additional insights into how individual traits influence loss aversion and DB. Due to the limited research on this influence, a non-directional hypothesis is proposed. It is assumed that based on Prospect Theory's concept of loss aversion, the effect of gain and loss framing on DB differs between men and women.

These findings highlight the role of anonymity, social context, and gender in shaping ethical behavior across different environments. While these variables have been studied in isolation, little is known about how they may interact with framing. We explore these interactions not to test a fully specified model, but to examine whether effects observed in prior studies generalize across contexts and subgroups. By doing so, we address calls for more nuanced, ecologically valid assessments of DB.

Materials & Methods

Sample

Based on the findings of Schindler and Pfattheicher [8], who reported a medium effect of the two framings (Gain vs. Loss) on DB in alignment with the main hypothesis of this paper, we considered a sample size estimation to detect a medium effect (d_z = 0.5). We conducted a simulation-based power analysis for a linear mixed-effects model using the simr package in R [60]. The simulated model included a random intercept for participant ID, one within-subject factor (two levels), and two between-subject factors (two levels each), reflecting the planned experimental design. For the primary hypothesis concerning the effect of framing, we assumed a fixed effect size of $\beta_{Std.}$ = 0.4. Residual variance and random effect structure were derived from simulated datasets, based on the experimental design. Power was estimated across sample sizes ranging from 0 to 300, in increments of 40, using 500 simulations per sample size. The estimated power to detect the within-subject effect of framing reached 80% at approximately n = 60 (see Figure 1). A similar approach was used to estimate the required sample size for the two exploratorily hypothesized two-way interactions of framing and gender, as well as framing and social setting.

Assuming the same effect size (β = 0.4) and using 500 simulations per sample size, the estimated power to detect these interaction effects reached 80% at around *n* = 200 (see Figure 2).

Fig. 1. *Simulation based sample size estimation for the within-subject main effect*

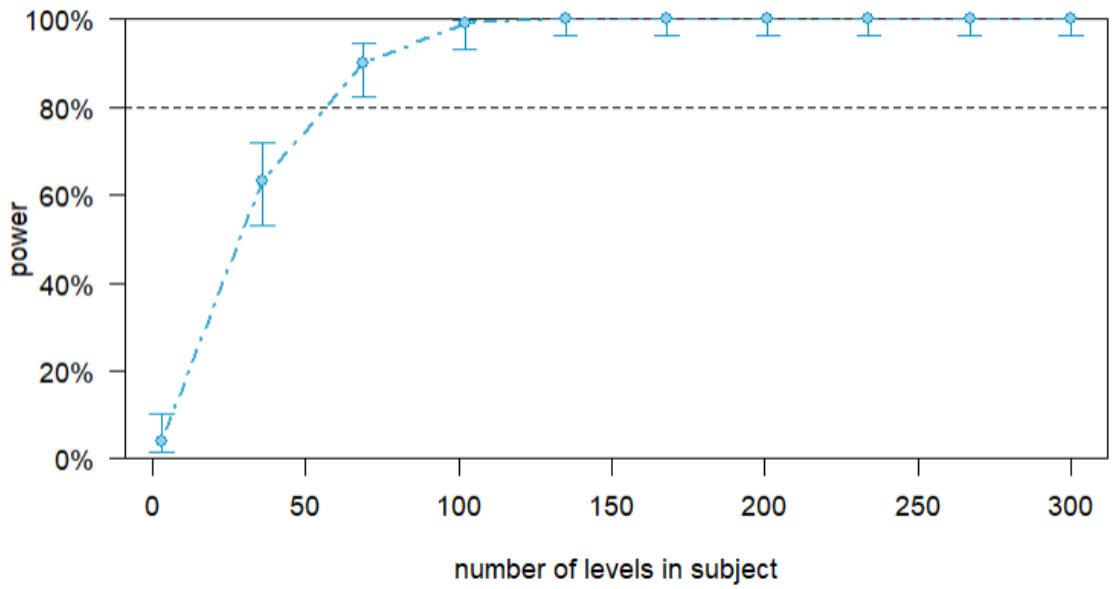
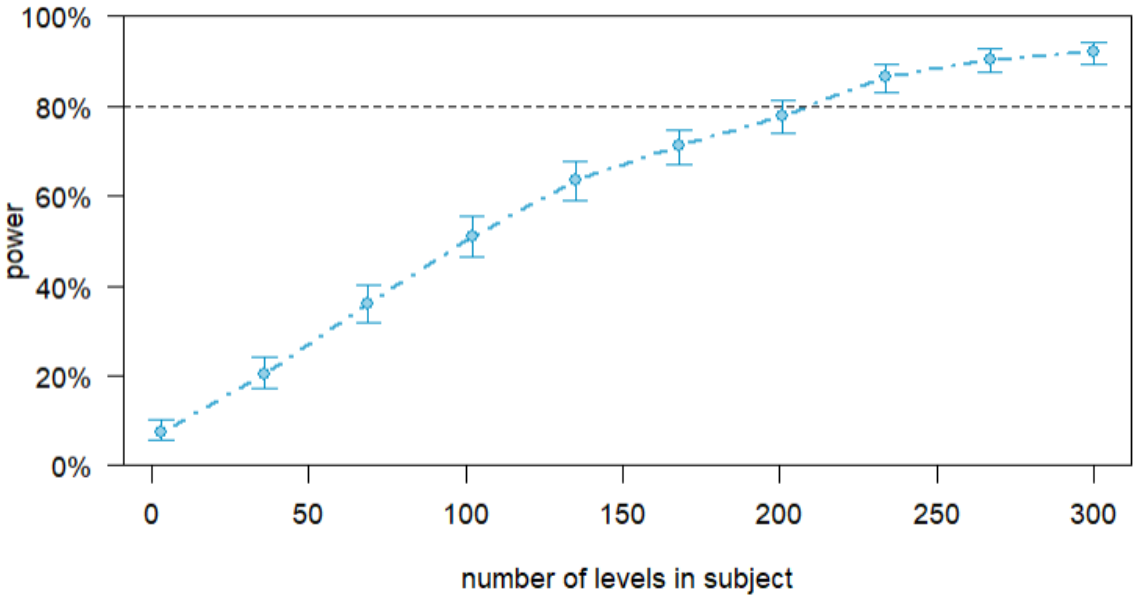


Fig. 2. *Simulation based sample size estimation for the two within and between interaction*



A total of 238 participants were tested in either an online (*n* = 125) or an in-person (*n* = 113) environment. In the online condition, 36 participants were male (29%) aged 19 to 75 years (*M* = 27, *SD* = 13.72) and 89 were female (71%) between 19 and 75 years of age (*M* = 30.2, *SD* = 12.78). The gender distribution for the in-person condition was nearly balanced with 56 male participants (50%) aged 19 to 37 years (*M* = 24.71, *SD* = 3.13) and 57 female participants (50%) between the ages of 19 and 27 (*M* = 23.05, *SD* = 2.14). All participants had normal or corrected-to-normal vision and five reported colorblindness (online: *n* = 2, in-person: *n* = 3). Participants for the in-person condition were recruited at the Institute of Sport and Sports Science at Heidelberg University, where they were informed about the study's duration, monetary compensation, and required tasks. As a result, the sample primarily consisted of sport and some psychology students. Recruitment for the online condition was conducted in two waves. In the first wave, 69 participants (55%) were selected through word-of-mouth recommendation in sport clubs and friendship groups and received an email with study information and a participation link. In the second wave, 56 participants (45%) were recruited via self-selection from the participant pool of the Institute of Sport Science at Saarland University, which mainly consists of sports and a few psychology students. Prior to data collection, potential participants received an email with the study description and a participation link. No specific inclusion or exclusion criteria were defined. Informed consent was obtained from all participants before testing, and participants were assured that their data would be anonymized and treated confidentially in subsequent analyses. The main hypothesis concerning the framing effect (gain – loss) on DB, and the exploratory interaction with gender, as well as the experimental design, and the planned statistical analyses were preregistered prior to data collection

(https://aspredicted.org/rkd6-34j7.pdf). The data and the analyses scripts that support the findings of this study are openly available in OSF at: https://osf.io/hmqgd/?view_only=5a6b631a719849f9bdae8c38eb7e5372

Procedure – Data Collection

A plausible distraction task was included to divert attention from the actual aim of the study. Participants were informed that the primary goal of the study was to investigate cognitive learning, with the initial task serving as a training phase for the following performance test on visual search ability. To reinforce this belief, a computerized Visual Search ability task was introduced, in which participants were presented with 10 image pairs. Each trial lasted 30 seconds, and each image pair contained exactly 10 differences. Participants were instructed to accurately mark as many differences as they could identify within the allotted time. They were also informed that their performance in this task would serve as the actual measure of interest. To further motivate engagement, participants received a reward of 3 cents per correctly marked difference, creating the impression that the experiment aimed to assess their visual search performance rather than their decision-making behavior in the DST (see supplement for further details).

Test sessions for both conditions were similar and designed to last approximately one hour. The in-person data collection took place in a laboratory at Heidelberg University and was performed in groups of five or six participants. Each workstation was separated by partition walls to prevent visual contact between participants. The researcher was positioned with their back to the participants to minimize any feeling of being observed. The timeframe and location for data collection in the online condition was flexible and determined individually by each

participant. The study's main task was administered using SoSci Survey [61] and JavaScript. To ensure comparability with the in-person condition, the questionnaire for the online setting was not accessible via mobile phones or tablets, but only through computers. The study was approved by the ethics committees of Heidelberg University and Saarland University.

Participants in both settings began by answering computer-based questionnaires on personal information, such as gender and age, followed by assessments of psychometric data, including values, achievement motivation, and personality traits (see supplement for psychometric scales). Afterwards, the main task to measure DB was completed. In the online environment, a feedback loop was included, allowing participants to reread the instructions and complete a practice trial. They were only able to continue once they confirmed that they had understood the task.

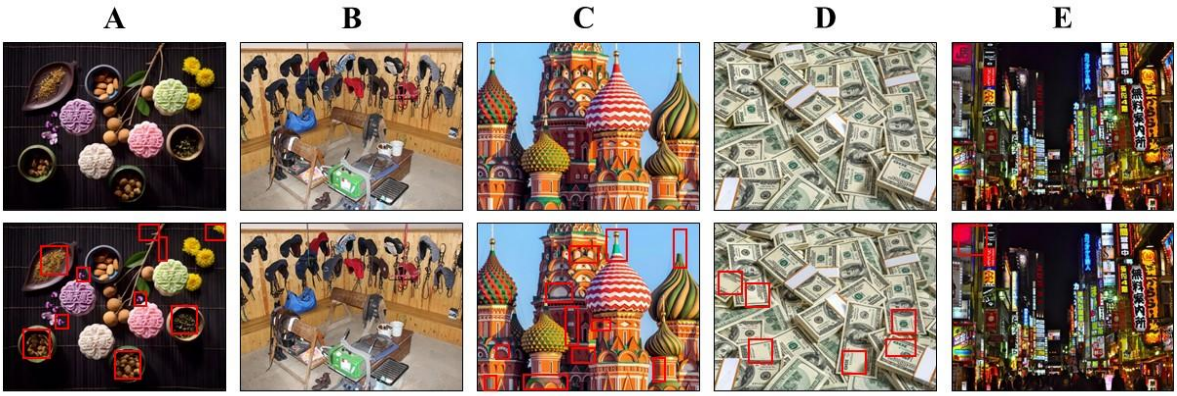
Instruments

Difference Spotting Task – Dishonest Behavior

With the Difference Spotting Task, Liu et al. [32] introduced a cognitive assessment tool to measure DB at both the item and individual level. This non-verbal task is suitable for widespread use across culturally and educationally diverse populations [32]. The computerized DST presents participants with sequential comparisons of image pairs. It consists of 80 pairs in total, including 40 solvable trials with 10 differences each (see Figure 1 A) and, unbeknownst to the participants, 40 unsolvable trials (see Figure 1 B), where the pairs are identical. To reinforce participants' belief that the study focused on cognitive learning, they were instructed that all items are solvable and that difficulty levels would range from easy (10

differences, Figure 1 C) to intermediate (6 differences, Figure 1 D) and hard (containing only one difference, Figure 1 E), while in reality all solvable 40 items have exactly 10 differences.

Fig. 3. *Examples of the visual stimuli used in this study (Adapted from Liu et al., [32]).*



Note. (A) Example of an original stimulus pair in solvable items. (B) Example of an original stimulus pair in "unsolvable items," containing no differences. Participants were instructed that there would be two additional difficulty levels besides (C) "easy" (10 differences), namely (D) "medium" with six differences, and (E) "hard" with one difference. Note, however, that the instructions differed from the actual stimulus pairs. Differences between the target stimuli are highlighted by red boxes for illustration purposes.

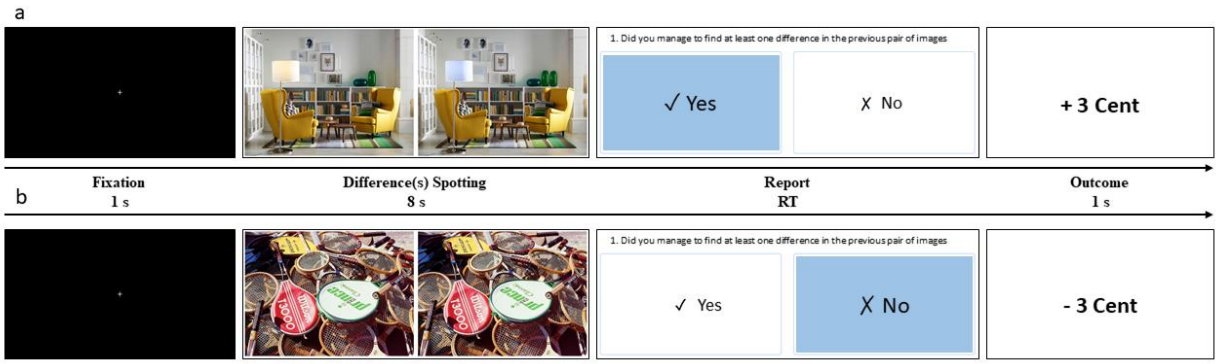
During each trial, participants are asked to indicate whether they had spotted at least one difference by selecting either "✓ Yes" or "✗ No", without further specifying the number or exact location of differences. While participants may have identified more than one difference, they were only required to find a single one to legitimately respond "Yes". They were instructed to double-check their responses and only confirm that they had found at least one difference if they were absolutely certain. If they were uncertain, they were advised to respond "No" and proceed to the next trial. Participants were also instructed that changing their response after the initial selection was not possible. The number of "✓ Yes" responses in the unsolvable

trials, where participants claim to have spotted a difference, is considered an indication of dishonesty and is used as a measure of DB. The maximum extent of DB for the DST is therefore 40. The sequences of picture pairs are randomized to eliminate potential order effects. To reduce the likelihood of honest errors and enhance the reliability of the task, participants are given a 60-second break after 40 trials.

To analyze the hypothesized differences in DB between gain- and loss-framing, the DST was adapted to a within-subject design for both environments. To control for sequence effects, participants in both the online and in-person conditions were randomly assigned to one of two protocols: Gain-Loss or Loss-Gain. In the Gain-Loss order, participants initially completed the first 40 image pairs under gain-framing, where they earned 3 cents for finding at least one difference (“Yes” response). A “No” response resulted in no earnings (+0 Cents). These results were presented following every trial (Figure 2 A). The amount of 3 cents per trial was chosen to align with the original implementation of the DST [32], ensuring comparability with prior studies using this paradigm. Following this gain-framing block (40 trials), a break was introduced, during which the loss-framing was instructed. The break length was set to a minimum of 90 seconds, but could be extended by each participant individually. Importantly, participants were told that their earnings from the first block were retained, ensuring that the reference point at the start of the loss-framing condition was identical for all participants and thus independent of their actual prior performance. Participants were credited with an initial balance of 120 cents, equivalent to the maximum possible earnings in the gain-framing. Under loss-framing, participants lost 3 cents from their balance for each trial in which they reported finding no difference (“No” response). The corresponding

feedback was displayed after each trial, indicating either a 3 Cent deduction (“No” response) or no change in balance (“Yes” response) (Figure 2 B). At the end of the DST, participants were shown their final results, including their total earnings. Similarly, participants in the Loss-Gain sequence completed the task in reverse order, starting with loss-framing and an initial balance of 120 cents before switching to gain-framing after 40 trials. Due to the split of the DST, the maximum extent of DB for both the gain and loss frames is 20 each. The money earned by participants in the first loss-framing block was retained, and everyone started the gain-framing block with no initial balance. Again, break length was set to a minimum of 90 seconds, but could be extended by each participant individually. Critically, this design ensured that participants in both sequences began each framing condition with the same monetary reference point, thereby controlling for prior earnings and maintaining experimental equivalence. Each framing condition was introduced independently and participants did not risk losing previously accumulated personal earnings.

Fig. 4. *Sequence of a single trial in the DST with example rewards for gain (a) and loss (b) framing (Adapted from Liu et al., [32])*



Note. In the gain frame (A), any “Yes” response always results in a reward of “+3 Cent”. In the loss frame (B), any “No” response results in a deduction of “-3 Cent”. All other responses lead to no change, displaying “+0 Cent”.

Statistics

The statistical analyses were conducted using R Statistical Software (version 4.4.0) for Windows [62]. We used a log-linear Poisson regression model to analyze the frequency counts of honest and dishonest participants, incorporating the effects of gender, setting, and frame. The model included interaction terms to account for potential dependencies between these factors. To test if DB was present for each gender, setting and framing, one-sample Wilcoxon tests were used to compare the empirical values against zero. The main hypothesis was analyzed for pooled conditions (online, in-person) using a linear mixed-effects model with participant as a random factor to examine the influence of the within-subjects factor framing (2: gain, loss), on the mean extent of DB. The additional and exploratory hypothesis, analyzing the influence of framing (2: gain, loss), condition (2: online, in-person) and gender (2: male, female) on the mean extent of DB, was tested using a linear mixed-effects model with participant as a random effect. The mixed-effects models were conducted with the nlme R package [63]. Descriptive statistics were calculated via the psych R package [64]. Effect sizes were computed by using the rcompanion R package [65]. No participants were excluded from the analyses and all measures and transformations are reported. For all analyses the alpha level was set to .05.

Results

General Results: Is DB present?

Overall, 58% (n = 53) of male participants engaged in DB, reporting at least one unsolvable pair as solved in the DST, while 72% (n = 105) of female participants were dishonest. This difference was statistically significant ($\beta = 0.75$, 95% confidence interval (CI) [0.01, 1.51], $p = .049$). In the online setting, 67% of men (n =

24) and 71% of women (*n* = 63) engaged in DB, showing no significant difference (β = -0.61, *p* = .265). Regarding framing effects, DB frequencies decreased slightly in the gain frame, but the differences were not statistically significant: 53% of men (*n* = 19) and 56% of women (*n* = 50) reported DB. In the loss frame, 53% of men (*n* = 19) and 64% of women (*n* = 57) were dishonest (β = 0.18, *p* = .819). In contrast, within the in-person condition, 52% of men (*n* = 29) and 74% of women (*n* = 42) engaged in DB at least once, but this interaction was not statistically significant (β = -0.61, *p* = .265). Similarly, no significant gender differences were observed in the gain frame, where 43% of men (*n* = 24) and 61% of women (*n* = 35) engaged in DB. In the loss frame, 38% of men (*n* = 21) and 60% of women (*n* = 34) reported at least one instance of DB (β = 0.18, *p* = .819).

One-sample Wilcoxon tests revealed significant differences from zero for both men and women in the online and in-person conditions, with large effect sizes, across both the gain and loss frames (see Table 1).

Table 1. *Dishonest Behavior is present in gain and loss frames for both conditions and genders*

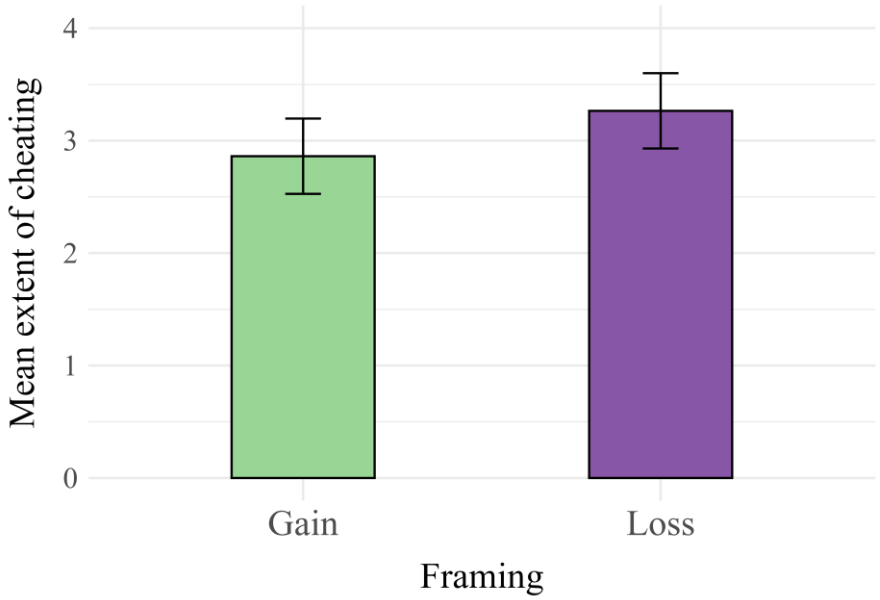
			Test Statistics				
			M	*SD*	*z*	*p*	*r*
Online	Men	Gain	4.50	7.17	-3.98	**<.001**	.88
		Loss	4.86	7.20	-3.98	**<.001**	.88
	Women	Gain	3.08	5.30	-6.31	**<.001**	.88
		Loss	3.56	5.33	-6.70	**<.001**	.87
In Person	Men	Gain	2.00	4.20	-4.46	**<.001**	.88
		Loss	2.09	4.05	-4.17	**<.001**	.88
	Women	Gain	2.33	3.84	-5.31	**<.001**	.88
		Loss	2.95	4.39	-5.22	**<.001**	.88

Note. Extent of cheating (mean, standard deviation), results of one-sample Wilcoxon test (*z*-value, *p*-value), and the effect size (*r*) are presented.

Differences in DB for gain and loss frames

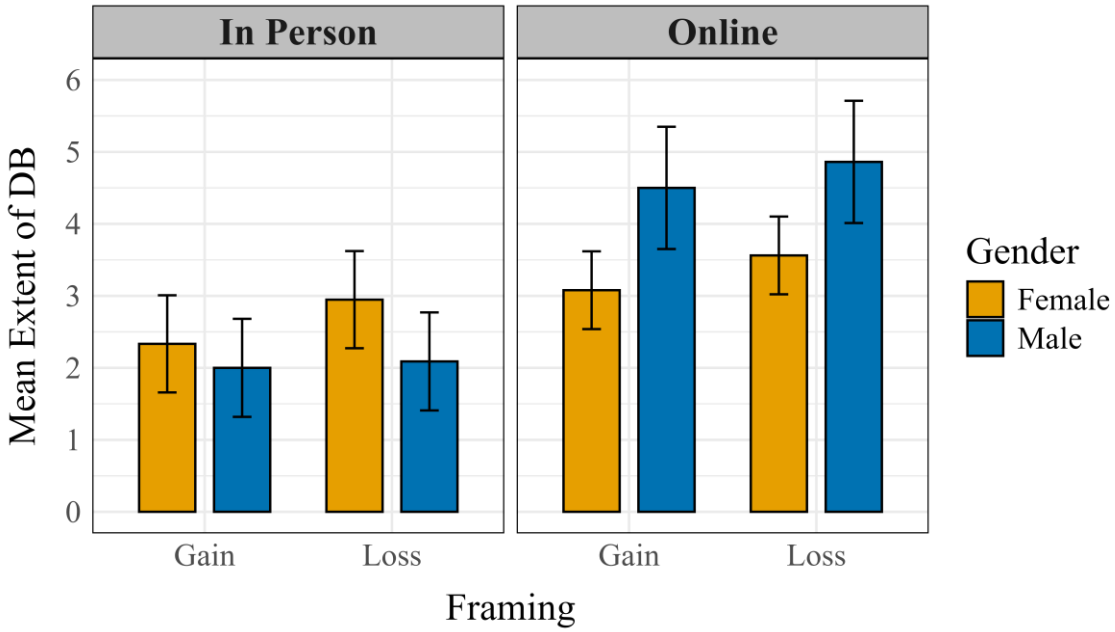
We used a linear mixed-effects model (estimated using maximum likelihood) to predict the extent of DB with the within-subjects factor framing (2: gain, loss) and the random effect participant. The total explanatory power is large (condition R^2 = 0.80) and the part related to the fixed effects is very small (marginal R^2 < .01). Within this model the effect of framing is statistically non-significant (β = 0.40, 95% CI [-0.01, 0.82], $t_{(237)}$ = 1.90, p = .058). This result leads to the rejection of the main hypothesis, suggesting that gain and loss framing within the DST did not trigger DB differently (see Figure 3). The additional analysis also used a linear mixed-effects model (estimated using maximum likelihood) to predict the extent of DB with the within-subjects factor framing (2: gain, loss) and the between-subjects factors condition (2: online, in-person) and gender (2: male, female). It included the participant identification variable as a random effect. The model's explanatory power is large (conditional R^2 = 0.80) and the part related to the fixed effects alone is small (marginal R^2 = 0.03). Within this model, only the effect of condition is statistically significant and positive (β = 2.50, 95% CI [0.36, 4.64], $t_{(234)}$ = 2.28, p = .024), indicating that DB is higher online than in-person, thus confirming the second hypothesis (see Figure 4). All other main and interaction effects did not reach significance, leading to the rejection of the exploratory hypotheses on the influence of framing, setting and gender on DB (see Table 2).

Fig. 5. Loss framing does not trigger higher DB than gain framing



Note. Error-bars represent the standard error of mean

Fig. 6. DB is not influenced by framing, but is higher online compared to in-person



Note. Error-bars represent the standard error of mean

Table 2. *Results of the linear mixed-effects model*

	Test Statistics					
	Estimate	*SE*	95% CI		*t*	*p*
			LL	UL		
Framing	0.09	0.44	-0.77	0.95	0.20	.839
Condition	2.50	1.1	0.36	4.64	2.28	**.024**
Gender	0.33	0.97	-1.56	2.22	0.34	.731
Framing*Condition	0.27	0.7	-1.1	1.64	0.39	.699
Framing*Gender	0.52	0.62	-0.68	1.73	0.85	.397
Condition*Gender	-1.75	1.4	-4.49	0.98	-1.25	.212
Framing*Condition*Gender	-0.40	0.90	-2.15	1.35	-0.45	.654

Discussion

The goal of this study was to examine whether gain and loss framings differentially influence DB, alongside the role of social setting and gender. Grounded in Prospect Theory, we hypothesized that DB would be higher in a loss frame than in a gain frame, as participants strive to minimize emotional distress. Additionally, we expected that the anonymity of online settings would increase DB due to greater social distance and reduced accountability.

Loss Aversion and DB

Our analyses did not reveal a significant effect of loss aversion on DB. Thus, the main hypothesis, that loss framing would trigger higher DB then a gain frame, must be rejected. These findings contradict the theoretical predictions of Prospect Theory's loss aversion [2], which formed the basis of our hypothesis. However, they align with prior empirical studies that also found no evidence of loss aversion influencing DB [6, 40, 41]. Nevertheless, this study contributes meaningfully to the existing literature. While most previous research employed a between-subjects design to compare gain and loss framing effects, a within-subjects design, as used

here, is essential for minimizing measurement issues [66]. Individual differences, as suggested by the concept of *homo sociologicus* and self-licensing theory, may influence one's propensity to engage in DB, highlighting the importance of controlling for interindividual variation.

Another key distinction from prior studies is the choice of experimental tasks. Many studies rely on self-reported, one-shot tasks involving random events (e.g., die rolls or coin tosses) to measure DB at the aggregate level. Despite the methodological advancements of measuring DB at the individual level, our results align with previous studies that found no significant effect of loss aversion on DB [39, 40]. This suggests that the absence of a loss framing effect is not merely an artifact of experimental design but may reflect a more generalizable pattern. This further underscores the complexity of the relationship between loss aversion and DB, suggesting that additional factors (individual differences, task characteristics, or context-specific norms) could play a crucial role.

The reason for these discrepancies may lie in a more nuanced understanding of loss aversion. Gal and Rucker [12] argue for the existence of both a strong and a weak version of loss aversion. Our findings align more closely with the weak version, as the absence of a significant framing effect on DB suggests that participants did not universally perceive losses as more impactful than gains.

This perspective is further refined by considering the role of an individual's reference point. If the reference point is the status quo, then any negative outcome is perceived as a loss and any positive outcome as a gain. However, when the reference point is set above the status quo, individuals can experience a positive outcome even when moving below it [67]. In our study, it remains unclear whether participants adopted the initial endowment as their new reference point or whether

they continued to use their baseline financial status. If the latter was the case, the loss manipulation may not have been perceived as a true loss, which could explain the absence of a significant framing effect on DB.

Another perspective to consider is the hedonic principle, which suggests that individuals aim to maximize pleasure and minimize pain when making decisions [13]. This principle challenges the idea that losses always loom larger than gains by emphasizing that the impact of gains and losses depends on their magnitude. Research has shown that for small amounts of money, gains may actually loom larger than losses, as people have more experience coping with minor losses and do not perceive them as particularly consequential [12]. This could explain why loss aversion effects are not always observed in studies involving low stakes. If participants viewed small losses as relatively inconsequential, they may not have been as motivated to engage in DB to avoid them. Instead, minor gains might have been perceived as more rewarding, potentially negating the expected loss aversion effect.

Social Setting and DB

Our extended model revealed a significant main effect of condition, confirming the second hypothesis that DB is higher in online settings compared to in-person settings. However, neither gender nor framing had a significant effect on DB, once again contradicting the predicted loss aversion of Prospect Theory. The confirmation of hypothesis two aligns with the theories of social distance, social presence and anonymity while further supporting previous research [49, 50]. Participants in the in-person condition were not fully anonymous due to the presence of other individuals and the experimenter, leading to a lower perceived social distance. In contrast, the

online setting allowed participants to complete the experiment alone, increasing both perceived social distance and anonymity by eliminating social presence, which likely contributed to higher levels of DB.

Additionally, the laboratory setting may have induced a context-dependent shift in norms, as individuals are often more inclined to conform to ethical expectations in structured environments [42, 68, 69]. In contrast, participants online at home may have adhered more strongly to their personal moral standards, which can vary widely and may allow for greater justifications of DB. This finding suggests that individuals in online settings may be more susceptible to DB, possibly due to the reduced external social pressures and norms that typically regulate it.

Lastly, the observed gender differences in DB, independent of social condition, should be discussed. While overall, women engaged in DB more frequently than men, this pattern did not hold consistently within specific conditions or framings. Additionally, when examining the extent of DB, a non-significant trend emerged, suggesting that although men engaged in DB less frequently than women, they tended to do so to a greater extent when they did. These findings highlight the complexity of gender differences in DB, suggesting they are context-dependent and influenced by additional factors such as framing and social interactions [52, 70].

Limitations

Despite the contributions of this study, several limitations must be considered. First, the laboratory setting, while controlled, may not fully capture the complexities of real-world contexts. The presence of other participants in the in-person condition could have influenced behavior, and the online setting, although increasing social distance and anonymity, might not reflect the full range of social pressures

individuals experience outside the lab. Additionally, while the (DST) is a useful measure of DB, its ecological validity may be limited, as it focuses on relatively simple cognitive tasks rather than more complex real-life ethical decision-making scenarios. Another potential limitation concerns the relatively low monetary incentive (3 cents per trial), which may have limited the motivational impact of the gain and loss frames. However, this amount was intentionally chosen to remain consistent with the original DST design [32], ensuring methodological comparability. Moreover, the repeated-measures design involving 40 trials per frame allowed small effects to accumulate across decisions, which may partially mitigate the impact of low individual stakes. Although modest in absolute terms, this reward was sufficient to incentivize DB in both framings.

Furthermore, while gender was accounted for, no significant interaction effects were found in this study. However, this result should be interpreted with caution, as the sample was not perfectly balanced, and further research with more gender-diverse samples is needed.

Lastly, the weak effect of loss framing may be attributed to the nature of the reference point, as participants may not have perceived the losses as substantial enough to activate loss aversion. By using windfall gains at the start of the loss-frame condition, participants may not have felt that they had truly “earned” the initial balance. As a result, they may not have fully internalized the money as part of their entitlement, preventing an adequate shift in their reference point.

Conclusion

Returning to the example introduced at the beginning, our findings suggest that while fear of loss may strongly influence decision-making in real-world contexts

(e.g., sports or financial decisions), its' effect on DB in controlled experimental settings remains inconclusive. This discrepancy highlights the role of situational and psychological factors, such as the weak version of loss aversion, the hedonic principle, or varying reference points, that may moderate the framing effect on ethical decision-making.

In contrast, the social setting had a clear impact on DB, with significantly higher rates observed in the online condition. These results have important implications for both research and educational practices. If tasks are conducted online, whether in experimental studies or academic settings, they may be more susceptible to DB, potentially leading to biased or unreliable outcomes.

Overall, these findings challenge the assumption that loss aversion universally drives dishonesty. Instead, they emphasize the importance of contextual and methodological factors, such as reference points and monetary stakes, in shaping DB. Additionally, the results reinforce the role of social context, suggesting that reducing anonymity and increasing accountability could be effective strategies for mitigating DB in real-world settings. Future research should further investigate the boundary conditions of loss aversion in ethical decision-making and explore how different social and environmental factors interact to influence DB.

References

1. Hall M. The Man Who Fell to Earth. Texas Monthly. 12.02.2013.
2. Kahneman D, Tversky A. Prospect Theory: An Analysis of Decision under Risk. Econometrica. 1979;47:263. https://doi.org/10.2307/1914185.
3. Novemsky N, Kahneman D. The Boundaries of Loss Aversion. Journal of Marketing Research. 2005;42:119–28. https://doi.org/10.1509/jmkr.42.2.119.62292.
4. Tversky A, Kahneman D. The framing of decisions and the psychology of choice. Science. 1981;211:453–8. https://doi.org/10.1126/science.7455683.
5. Boyce CJ, Wood AM, Banks J, Clark AE, Brown GDA. Money, well-being, and loss aversion: does an income loss have a greater effect on well-being than an equivalent income gain? Psychological Science. 2013;24:2557–62. https://doi.org/10.1177/0956797613496436.
6. Ortiz JM, Zindel M, Da Silva S. The effect of loss aversion and entitlement on cheating: An online experiment. Acta Psychologica. 2023;233:103843. https://doi.org/10.1016/j.actpsy.2023.103843.
7. Kern MC, Chugh D. Bounded ethicality: the perils of loss framing. Psychological Science. 2009;20:378–84. https://doi.org/10.1111/j.1467-9280.2009.02296.x.
8. Schindler S, Pfattheicher S. The frame of the game: Loss-framing increases dishonest behavior. Journal of Experimental Social Psychology. 2017;69:172–7. https://doi.org/10.1016/j.jesp.2016.09.009.
9. Cameron JS, Miller DT. Ethical Standards in Gain versus Loss Frames. In: David De Cremer, editor. Psychological Perspectives on Ethical Behavior and Decision Making. Charlotte, NC: Information Age Publishing; 2009. p. 91–106.

10. Grolleau G, Kocher MG, Sutan A. Cheating and Loss Aversion: Do People Cheat More to Avoid a Loss? Management Science. 2016;62:3428–38. https://doi.org/10.1287/mnsc.2015.2313.
11. Klein SA, Thielmann I, Hilbig BE, Heck DW. On the robustness of the association between Honesty-Humility and dishonest behavior for varying incentives. Journal of Research in Personality. 2020;88:104006. https://doi.org/10.1016/j.jrp.2020.104006.
12. Gal D, Rucker DD. The Loss of Loss Aversion: Will It Loom Larger Than Its Gain? Journal of Consumer Psychology. 2018;28:497–516. https://doi.org/10.1002/jcpy.1047.
13. Harinck F, van Dijk E, van Beest I, Mersmann P. When gains loom larger than losses: reversed loss aversion for small amounts of money. Psychological Science. 2007;18:1099–105. https://doi.org/10.1111/j.1467-9280.2007.02031.x.
14. Mazar N, Amir O, Ariely D. The dishonesty of honest people: A theory of self-concept maintenance. Journal of Marketing Research. 2008;45:633–44. https://doi.org/10.1509/jmkr.45.6.633.
15. Gerlach P, Teodorescu K, Hertwig R. The truth about lies: A meta-analysis on dishonest behavior. Psychological Bulletin. 2019;145:1–44. https://doi.org/10.1037/bul0000174.
16. Abeler J, Nosenzo D, Raymond C. Preferences for Truth-Telling. Econometrica. 2019;87:1115–53. https://doi.org/10.3982/ecta14673.
17. Tao L, Au W. Values, self and other-regarding behavior in the dictator game. Rationality and Society. 2014;26:46–72. https://doi.org/10.1177/1043463113512995.

18. Rosenbaum SM, Billinger S, Stieglitz N. Let's be honest: A review of experimental evidence of honesty and truth-telling. Journal of Economic Psychology. 2014;45:181–96. https://doi.org/10.1016/j.joep.2014.10.002.
19. John LK, Loewenstein G, Rick SI. Cheating more for less: Upward social comparisons motivate the poorly compensated to cheat. Organizational Behavior and Human Decision Processes. 2014;123:101–9. https://doi.org/10.1016/j.obhdp.2013.08.002.
20. Kajackaite A, Gneezy U. Incentives and cheating. Games and Economic Behavior. 2017;102:433–44. https://doi.org/10.1016/j.geb.2017.01.015.
21. Leisge K, Kaczmarek C, Schaefer S. How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior. Frontiers in Psychology. 2024;15:1297058. https://doi.org/10.3389/fpsyg.2024.1297058.
22. Bursztyn L, Jensen R. Social image and economic behavior in the field: identifying, understanding and shaping social pressure. Annual Review of Economics; 2017;9:131-153. https://doi.org/10.1146/annurev-economics-063016-103625
23. Sen A. Rational fools: A critique of the behavioral foundations of economic theory. *Philosophy & Public Affairs*; 1977.
24. Weise P. Homo oeconomicus und homo sociologicus. Zeitschrift für Soziologie. 1989;18:148–61. https://doi.org/10.1515/zfsoz-1989-0205. German
25. Chowdhury SM, Jeon JY, Kim C, Kim S-H. Gender differences in repeated dishonest behavior: Experimental evidence. Games. 2021;12:44. https://doi.org/10.3390/g12020044.

26. Fischbacher U, Föllmi-Heusi F. Lies in disguise - an experimental study on cheating. Journal of the European Economic Association. 2013;11:525–47. https://doi.org/10.1111/jeea.12014.
27. Kröll M, Rustagi D. Reputation, Honesty, and Cheating in Informal Milk Markets in India. SSRN Journal. 2017. https://doi.org/10.2139/ssrn.2982365.
28. Du Y, Ma W, Sun Q, Sai L. Collaborative Settings Increase Dishonesty. Frontiers in Psychology. 2021;12:650032. https://doi.org/10.3389/fpsyg.2021.650032.
29. Capraro V. Gender differences in Lying in Sender-Receiver Games: A meta-analysis. Judgment and Decision Making. 2018;13:345–55. https://doi.org/10.1017/s1930297500009220.
30. Gneezy U. Deception: The Role of Consequences. American Economic Review. 2005;95:384–94. https://doi.org/10.1257/0002828053828662.
31. Heyman T, Vankrunkelsven H, Voorspoels W, White A, Storms G, Verheyen S. When Cheating is an Honest Mistake: A Critical Evaluation of the Matrix Task as a Measure of Dishonesty. Collabra: Psychology. 2020. https://doi.org/10.1525/collabra.294.
32. Liu J, Shen Q, Zhang J, Beyens U, Cai W, Decety J, Li H. The Difference Spotting Task: A new nonverbal measure of cheating behavior. Behavior Research Methods. 2021;53:1935–44. https://doi.org/10.3758/s13428-020-01526-w.
33. Duc Huynh TL. Replication: Cheating, loss aversion, and moral attitudes in Vietnam. Journal of Economic Psychology. 2020;78:102277. https://doi.org/10.1016/j.joep.2020.102277.

34. Garbarino E, Slonim R, Villeval MC. Loss aversion and lying behavior. Journal of Economic Behavior & Organization. 2019;158:379–93. https://doi.org/10.1016/j.jebo.2018.12.008.
35. Steinel W, Valtcheva K, Gross J, Celse J, Max S, Shalvi S. (Dis)honesty in the face of uncertain gains or losses. Journal of Economic Psychology. 2022;90:102487. https://doi.org/10.1016/j.joep.2022.102487.
36. Shalvi S. Dishonestly increasing the likelihood of winning. Judgmend and decision. making. 2012;7:292–303. https://doi.org/10.1017/S1930297500002266.
37. Kim KH, Guinote A. Cheating to win or not to lose: Power and situational framing affect unethical behavior. Journal of Applied Social Pyschology. 2022;52:137–44. https://doi.org/10.1111/jasp.12852.
38. Bogliacino F, Montealegre F. Do negative economic shocks affect cognitive function, adherence to social norms and loss aversion? Journal of the Economic Science Association. 2020;6:57–67. https://doi.org/10.1007/s40881-020-00091-4.
39. Reis M, Pfister R, Foerster A. Cognitive load promotes honesty. Psychological Research. 2023;87:826–44. https://doi.org/10.1007/s00426-022-01686-8.
40. Charness G, Blanco-Jimenez C, Ezquerra L, Rodriguez-Lara I. Cheating, incentives, and money manipulation. Experimental Economics. 2019;22:155–77. https://doi.org/10.1007/s10683-018-9584-1.
41. Ezquerra L, Kolev GI, Rodriguez-Lara I. Gender differences in cheating: Loss vs. gain framing. Economics Letters. 2018;163:46–9. https://doi.org/10.1016/j.econlet.2017.11.016.

42. Lieberman A, Schroeder J. Two social lives: How differences between online and offline interaction influence social outcomes. Current Opinion in Psychology. 2020;31:16–21. https://doi.org/10.1016/j.copsyc.2019.06.022.
43. Hoffmann E, McCabe K, Smith VL. Social distance and other-regarding behavior in dictator games. The American Economic Review. 1996;86:653–60.
44. Dickinson DL, McEvoy DM. Further from the truth: The impact of moving from in-person to online settings on dishonest behavior. Journal of Behavioral and Experimental Economics. 2021;90:101649. https://doi.org/10.1016/j.socec.2020.101649.
45. Biocca F, Harms C, Burgoon JK. Toward a More Robust Theory and Measure of Social Presence: Review and Suggested Criteria. Presence: Teleoperators & Virtual Environments. 2003;12:456–80. https://doi.org/10.1162/105474603322761270.
46. Baumeister RF. A self-presentational view of social phenomena. Psychological Bulletin. 1982;91:3–26. https://doi.org/10.1037//0033-2909.91.1.3.
47. Varvarigos D, Xin G. Social distance and economic development. Macroeconomic Dynamics. 2020;24:860–81. https://doi.org/10.1017/s1365100518000512.
48. Cohn A, Gesche T, Maréchal MA. Honesty in the digital age. Management Science. 2022;68:827–45. https://doi.org/10.1287/mnsc.2021.3985.
49. Kroher M, Wolbring T. Social control, social learning, and cheating: Evidence from lab and online experiments on dishonesty. Social Science Research. 2015;53:311–24. https://doi.org/10.1016/j.ssresearch.2015.06.003.
50. Waeber A. Investigating dishonesty-does context matter? Frontiers in Psychology. 2021;12:684735. https://doi.org/10.3389/fpsyg.2021.684735.

51. Lilleholt L, Schild C, Zettler I. Not all computerized cheating tasks are equal: A comparison of computerized and non-computerized versions of a cheating task. Journal of Economic Psychology. 2020;78:102270. https://doi.org/10.1016/j.joep.2020.102270.
52. Kennedy JA, Kray LJ. Gender similarities and differences in dishonesty. Current Opinion in Psychology. 2022;48:101461. https://doi.org/10.1016/j.copsyc.2022.101461.
53. Grosch K, Rau HA. Gender differences in honesty: The role of social value orientation. Journal of Economic Psychology. 2017;62:258–67. https://doi.org/10.1016/j.joep.2017.07.008.
54. Aoki K, Akai K, Onoshiro K. Deception and confession: Experimental evidence from a deception game in Japan. SSRN Electronic Journal. 2010. https://doi.org/10.2139/ssrn.1677773.
55. Ruffle BJ, Tobol Y. Honest on mondays: Honesty and the temporal separation between decisions and payoffs. European Economic Review. 2014;65:126–35. https://doi.org/10.1016/j.euroecorev.2013.11.004.
56. Clot S, Grolleau G, Ibanez L. Smug alert! Exploring self-licensing behavior in a cheating game. Economics Letters. 2014;123:191–4. https://doi.org/10.1016/j.econlet.2014.01.039.
57. Eagly AH, Wood W. Social Role Theory. In: van Lange PAM, Higgins ET, Kruglanski AW, editors. Handbook of Theories of Social Psychology. London: SAGE Publications Ltd; 2012. p. 458–476. https://doi.org/10.4135/9781446249222.n49.

58. Levine EE, Bitterly TB, Cohen TR, Schweitzer ME. Who is trustworthy? Predicting trustworthy intentions and behavior. Journal of Personality and Social Psychology. 2018;115:468–94. https://doi.org/10.1037/pspi0000136.
59. Pierce JR, Thompson L. Explaining Differences in Men and Women's Use of Unethical Tactics in Negotiations. Negotiation and Conflict Management Research. 2018;11:278–97. https://doi.org/10.1111/ncmr.12135.
60. Green P, McLeaod CJ, Green P, MacLeod CJ. Simr: An R package for power analysis of generalised mixed models by simulation. // SIMR : an R package for power analysis of generalized linear mixed models by simulation. Methods in Ecology and Evolution. 2016;7:493–8. https://doi.org/10.1111/2041-210X.12504.
61. Leiner DJ. SoSci Survey; 2024.
62. R Core Team. R: A language and evironment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing; 2022.
63. Pinheiro J, Bates D, R Core Team. nlme: Linear and nonlinear mixed effects models; 2022.
64. Revelle W. psych: Procedures for personality and psychological research. Illinois, USA: Northwestern University; 2022.
65. Mangiafico SS. rcompanion: Functions to support extension education program evaluation. New Brunswick, New Jersey: Rutgers Cooperative Extension; 2023.
66. Mukherjee S, Sahay A, Pammi VSC, Srinivasan N. Is loss-aversion magnitude-dependent? Measuring prospective affective judgments regarding gains and losses. Judgment and decision making. 2017;12:81–9. https://doi.org/10.1017/S1930297500005258.

67. Higgins ET, Liberman N. The Loss of Loss Aversion: Paying Attention to Reference Points. Journal of Consumer Psychology. 2018;28:523–32. https://doi.org/10.1002/jcpy.1045.

68. Sudo N. Does the internet make people selfish? Effects of the internet on citizens' political attitudes. In: Endo K, Kurihara S, Kamihigashi T, Toriumi F, editors. Reconstruction of the Public Sphere in the Socially Mediated Age. Singapore: Springer; 2017. p. 47–69. https://doi.org/10.1007/978-981-10-6138-7_4.

69. Gino F, Ayal S, Ariely D. Contagion and differentiation in unethical behavior: the effect of one bad apple on the barrel. Psychological Science. 2009;20:393–8. https://doi.org/10.1111/j.1467-9280.2009.02306.x.

70. Lohse T, Qari S. Gender differences in face-to-face deceptive behavior. Journal of Economic Behavior & Organization. 2021;187:1–15. https://doi.org/10.1016/j.jebo.2021.03.026.

Anhang 5: Beitrag 5

Leisge, K., Heggenberger, A., & Schaefer, S. (im Review Prozess). (Dis)Honest when (Un)Seen: Observer presence decreases dishonest behavior. [Eingereicht bei Journal of Economic Psychology]

(Dis)Honest when (Un)Seen:

Observer Presence Decreases Dishonest Behavior

Kai Leisge[1], Anna Heggenberger[1] and Sabine Schaefer[1]
[1] Institute of Sport Sciences, Saarland University, Saarbrücken, Germany.

Corresponding Author: Kai Leisge; Saarland University; Institute of Sport Science; Campus Building B8 1; 66123 Saarbrücken (Saarland); Germany; E Mail: Kai.Leisge@uni-saarland.de

Acknowledgements: We thank Moritz Greiner for his valuable assistance in participant recruitment and data collection.

Declaration of competing interests: Kai Leisge, Anna Heggenberger and Sabine Schaefer report financial support was provided by Saarland University (employment).

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data Statement: Data and analysis scripts supporting the findings of this study are openly available via OSF: (https://osf.io/n4dh8/files/osfstorage?view_only=a0514d408dc64af2b6923320c44824bb).

Abstract

This study examined whether the physical presence of observers reduces dishonest behavior (DB). Prior empirical evidence suggests that DB decreases when another person is physically present, even without the possibility of sanctions. Using a within-subject design, 69 participants completed a Difference Spotting Task alone and under observation. The number of dishonest participants significantly decreased from 64% when alone to 38% under observation and the extent of DB was nearly halved under observation. These findings indicate that physical presence activates reputational concerns and social norms. Therefore, observation may serve as a practical, low-cost intervention to reduce dishonesty.

Keywords: Dishonesty; Cheating; Unethical behavior; Observation; Spectators; Social presence

1 Introduction

Imagine having the chance to engage in dishonest behavior (DB) for a personal gain, whether by crossing a red light, which saves time, or by accessing confidential work documents, which could provide a competitive advantage. Before acting, most people instinctively check for observers, reflecting concerns about sanctions and social judgment (Pillutla & Murnighan, 1995; van Bommel et al., 2012). Even without formal punishment, the presence of others can deter DB through reputational concerns, public self-awareness, and internalized moral norms (Mazar et al., 2008; Nieper et al., 2025; Thielmann & Hilbig, 2019). This observation leads to the research question of the present study: Does the physical presence of observers reduce DB?

The reason why individuals engage in DB has been explained through economic and sociological perspectives. Economic models (homo oeconomicus) assume individuals act as rational agents, weighing benefits against costs (Gerlach et al., 2019). Yet, people often forgo maximum gains even when anonymity is guaranteed (Abeler et al., 2019), suggesting that moral norms and self-concept (homo sociologicus) matter (Rosenbaum et al., 2014). Complementing these views, self-licensing theory suggests that individuals differ in their behavioral patterns. Some consistently refrain from DB (ethical type), others engage in DB whenever possible (economic type), while a mixed type alternates between honesty and dishonesty, balancing moral and material considerations across contexts (Kajackaite & Gneezy, 2017; Leisge et al., 2024). These frameworks highlight the presence of others as a key factor influencing DB (Gneezy, 2005).

Empirical evidence on observation cues and DB is limited and inconsistent. Cai et al. (2015) found no reduction in DB in a die-roll paradigm (Fischbacher & Föllmi-Heusi, 2013) when eye images were displayed. In contrast, using the same task, Oda et al. (2015) and Pfattheicher et al. (2019) reported that cues of being watched reduced prosocial lying and cheating. Cheating also decreased in the matrix task under camera surveillance (Jansen et al., 2018) and in the mind game with a virtual observer (Mol et al., 2020). Critically, research on actual physical presence is scarce. A recent study showed that participants who acted anonymously online exhibited more DB than those in an in-

person environment, both in a fine motor tracing task (Leisge et al., 2025) and a cognitive task (Leisge Gain Loss). Additionally, Köbis et al. (2019) found that DB decreased when another person was physically present, even when no observation or sanction was possible. These results suggest that real social presence may exert a stronger normative influence than symbolic cues such as images of eyes. Based on this evidence, we hypothesize that the physical presence of an observer reduces both the number of dishonest participants and the extent of DB.

2 Method

2.1 Sample

Since no previous study has applied the DST to measure DB in both an alone and observer condition using a within-subjects design, medium effect sizes were assumed for a priori sample size estimation via G*Power (Faul et al., 2009). For the McNemar test assessing differences in DB occurrence, the required sample size was estimated at n=65 (α=.05, power = .80). For the second hypothesis on differences in DB extent, a one-tailed paired-samples t-test was planned, requiring n=27 under the same parameters.

A total of 69 participants were tested. The sample was nearly gender-balanced, with 36 male participants (age range: 20-29 years, M=22.39, SD=2.00) and 33 female participants (age range: 20-26 years, M=22.42, SD=1.52). Recruitment occurred via self-selection from the Institute of Sport Science participant pool at Saarland University. No inclusion or exclusion criteria were applied. Informed consent was obtained, and participants were assured of anonymity and confidentiality. This study was approved by the Ethics Committee of Saarland University.

The main hypotheses, design, and planned analyses were preregistered prior to data collection (https://aspredicted.org/634h-qcx3.pdf). The data and analysis scripts supporting the findings of this study are openly available via OSF: (https://osf.io/n4dh8/files/osfstorage?view_only=a0514d408dc64af2b6923320c44824bb).

2.2 Instrument

To measure DB, we used an adapted version of the Difference Spotting Task (DST), an unsolvable paradigm for detecting cheating at both item and individual levels (Liu et al., 2021). Participants completed 20 trials per condition in a computerized spot-the-difference game. Each trial displayed a colored image pair for 8 seconds, after which participants indicated whether they had found at least one difference by selecting "✓ Yes" or "✗ No" without time constraints (Figure 1).

Figure 1. Sequence of events in a single trial in the DST with example rewards for a "yes" response (Adapted from Liu et al., 2021).

Note. Starting with fixation (1 second) and followed by a pair of pictures for 8 seconds. Depending on the chosen answer ("Yes" or "No") the corresponding outcome screen was shown (1 second).

Unbeknownst to participants, half of the trials were solvable (with 10 modifications each, Figure 2, A), and half were unsolvable (identical images, Figure 2, B). Participants were instructed to respond "Yes" only when they were certain that they found a difference. They did not need to indicate the number or location of differences, therefore creating an opportunity for DB. To maintain the credibility of the task and mask its true purpose, participants were informed that image pairs varied in difficulty and could contain 1, 6 or 10 differences (figure 2, C-E). Any "Yes" response on an unsolvable trial was coded as an instance of DB. The extent of DB was operationalized as the number of "Yes" responses on unsolvable trials (maximum of 10 per condition). As an incentive for DB, participants received a small monetary reward (12 cents) for each "Yes" response, regardless of trial type.

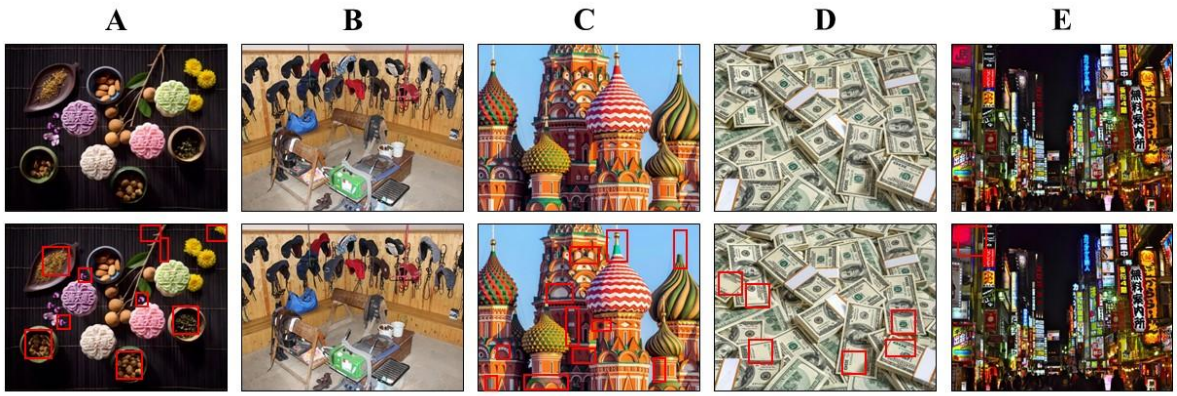


Figure 2. Examples of the visual stimuli used in this study (Adapted from Liu et al., 2021).
Note. (A) Solvable stimulus pair. (B) Unsolvable stimulus pair. Participants were instructed that there would be three difficulty levels: (C) “easy” (10 differences), (D) “medium” (6 differences), and (E) “hard” (1 difference). Note, however, that the instructions differed from the actual stimulus pairs. Differences between the target stimuli are highlighted by red boxes for illustration purposes.

2.3 Design

Participants were invited to the lab in groups of three without focusing on gender-based assignment. In the alone condition, each participant completed one block of 20 DST items (10 solvable, 10 unsolvable) first. The task was projected via beamer onto a 1.50 × 1.50 m screen, and responses were entered with a mouse-click. Participants were alone in the room, received standardized written instructions, and completed a practice trial.

In the observer condition, the same setup was used after all participants had finished the alone condition. One participant completed a new block of 20 DST items while the other two and the experimenter silently observed from behind, with full visibility of the participant’s screen. Each participant received a different item set. To maintain the cover story, participants were told the study examined cognitive performance with and without spectators. The initial DST was framed as training for a visual search test. A subsequent filler task (two image pairs per condition, 30 s each) reinforced this cover story but is not discussed further in this manuscript.

2.3 Statistics

The statistical analyses were conducted using R Statistical Software (version 4.4.0) for Windows (R Core Team, 2022). A McNemar test examined differences in the proportion of honest vs. dishonest participants between conditions. To test differences in the extent of DB (number of "yes" responses on unsolvable trials), a paired-samples *t*-test was used. As the normality assumption was violated, a Wilcoxon signed-rank test was computed as a non-parametric alternative. Effect sizes are reported as Cohen's *dz* (*t*-test) and rank-biserial correlation *r* (Wilcoxon). The significance level was set at α=.05.

3 Results

In total, 44 participants (64%) engaged in DB in the alone condition, whereas only 26 individuals (38%) did so in the observer condition. A McNemar's test revealed a statistically significant difference in response patterns between the two conditions ($\chi^2_{(1)}$=13.14, *p*<.001), indicating that participants were more likely to behave dishonestly when alone than when being observed. This finding supports our first Hypothesis. Of these, 20 participants engaged in DB when alone but acted honestly in the presence of observers, while only two participants showed the opposite pattern. No behavioral change was observed in 47 participants (68%). 23 remained honest across both conditions, and 24 engaged in DB in both. Figure 3 displays the mean extent of DB across the two experimental conditions. The paired-samples t-test revealed that participants cheated significantly more in the alone condition (*M*=2.06, *SD*=2.43) than in the spectator condition (*M*=1.09, *SD*=2.08, $t_{(68)}$= 4.83, *p*<.001, *dz* = 0.58). The non-parametric test confirms this result (*V*=744.50, *p*<.001, *r*=.82), therefore supporting the second hypothesis.

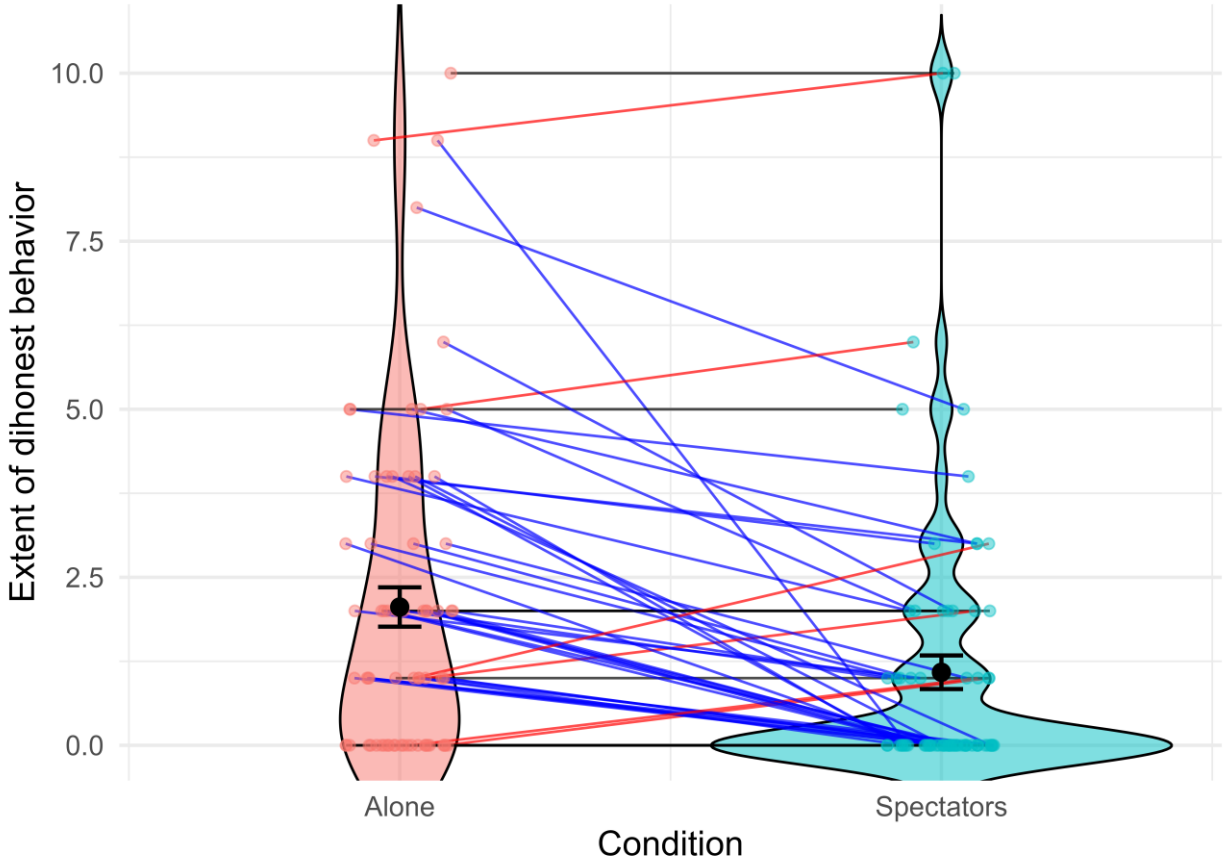


Figure 3. DB is higher in the alone condition. Violin plots showing the distribution of DB.

Note. Individual data points are displayed as semi-transparent dots. Lines connect individual changes: increase (red), decrease (blue), no change (black). Black circles represent the mean and vertical bars indicate ±1 standard error of the mean.

4 Discussion

The present study aimed to examine whether the physical presence of observers reduces DB. We hypothesized that participants would engage in less DB when performing a task in front of observers compared to when alone. Our findings support this hypothesis. Both the number of participants engaging in DB and the extent of DB were significantly lower in the observer condition than in the alone condition. These results provide robust evidence that real social presence can inhibit DB.

Our findings align with prior research demonstrating that cues of observability can reduce unethical behavior. Studies using symbolic observation cues, such as images of eyes, have shown that perceived surveillance can decrease lying and cheating (Oda et al., 2015; Pfattheicher et al.,

2019). Beyond symbolic cues, our results are also consistent with studies comparing anonymous online and co-acting in-person contexts, which found higher rates of DB in online environments than in face-to-face settings (Kroher & Wolbring, 2015; Leisge et al., 2025; Waeber, 2021). Most importantly, our findings complement the work of Köbis et al. (2019), who reported that the physical presence of another person reduces DB. Together, these studies underscore the powerful role of social presence in shaping ethical decision-making.

At a more mechanistic level, our findings are consistent with a two-channel account of dishonesty in which behavior results from a costless honest channel versus a cognitively costly dishonest channel. Increasing attentional demands and reputational concerns (as under observability) shifts behavior toward the honest channel (Brocas & Carrillo, 2019). In our setting, the observation increases control demands and the salience of evaluation, thereby raising the cognitive cost.

What distinguishes the present study is its within-subject design, which has not been previously applied to this research question. This design controls for interindividual differences in moral orientation, risk preferences, and personality traits, thereby increasing statistical power and internal validity. Furthermore, it allows for the direct observation of behavioral change within the same individual across conditions, providing stronger evidence for an effect of observer presence. Additionally, the DST enabled repeated opportunities to engage in DB, allowing for a detailed, individual-level assessment of DB rather than a single binary outcome.

The observed reduction in DB suggests that reputational concerns, fear of detection and punishment, and the desire to maintain moral self-worth outweighed the potential benefits of DB when being observed.

These findings resonate with theories of self-concept maintenance (Mazar et al., 2008) and that individuals often interpret norms in ways that justify their own actions (Mitra & Shahriar, 2020). Being observed increases concern for one's reputation, which in turn promotes honesty (Nieper et al., 2025). Furthermore, our results may also imply that social norms become more salient in the

presence of others, activating internalized standards of honesty and fostering public self-awareness (van Bommel et al., 2012).

From an applied perspective, these findings highlight the potential of low-cost interventions, such as increasing social presence or perceived observability, to curb DB in organizational and educational settings. Forms of supervision may suffice to promote honesty without resorting to strict enforcement measures. Future research should explore boundary conditions and underlying mechanisms to better understand how and when social presence promotes honesty.

4.1 Limitations

Despite these contributions, several limitations warrant consideration. First, the laboratory setting and modest financial incentives may limit ecological validity. Real-world dishonesty often involves higher stakes and more complex social dynamics. Second, our observer condition involved passive onlookers who could not impose sanctions. Future research should manipulate the observer's role (e.g., peer vs. authority figure) and monitoring intensity to disentangle reputational from deterrence-based effects. Furthermore, while the within-subject design strengthens causal inference, it may introduce order effects, as the alone condition always preceded the observer condition. Counterbalancing or including a between-subjects replication would address this concern.

References

Abeler, J., Nosenzo, D., & Raymond, C. (2019). Preferences for truth-telling. *Econometrica*, *87*(4), 1115–1153. https://doi.org/10.3982/ecta14673

Brocas, I., & Carrillo, J. D. (2019). A neuroeconomic theory of (dis) honesty. *J. Econ. Psychol.*, 71, 4–12. https://doi.org/10.1016/j.joep.2018.09.001

Cai, W., Huang, X., Wu, S., & Kou, Y. (2015). Dishonest behavior is not affected by an image of watching eyes. *Evol. Hum. Behav.*, *36*(2), 110–116. https://doi.org/10.1016/j.evolhumbehav.2014.09.007

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behav. Res. Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/brm.41.4.1149

Fischbacher, U., & Föllmi-Heusi, F. (2013). Lies in disguise - an experimental study on cheating. *J. Eur. Econ. Assoc.*, *11*(3), 525–547. https://doi.org/10.1111/jeea.12014

Gerlach, P., Teodorescu, K., & Hertwig, R. (2019). The truth about lies: A meta-analysis on dishonest behavior. *Psychol. Bull.*, *145*(1), 1–44. https://doi.org/10.1037/bul0000174

Gneezy, U. (2005). Deception: The role of consequences. *Am. Econ. Rev.*, *95*(1), 384–394. https://doi.org/10.1257/0002828053828662

Jansen, A. M., Giebels, E., van Rompay, T. J. L., & Junger, M. (2018). The Influence of the presentation of camera surveillance on cheating and pro-social behavior. *Front. Psychol.*, *9*, 1937. https://doi.org/10.3389/fpsyg.2018.01937

Kajackaite, A., & Gneezy, U. (2017). Incentives and cheating. *Games Econ. Behav.*, *102*, 433–444. https://doi.org/10.1016/j.geb.2017.01.015

Köbis, N., van der Lingen, S., Dores Cruz, T. D., Iragorri-Carter, D., van Prooijen, J.-W., Righetti, F., & van Lange, P. (2019). The look over your shoulder: Unethical behaviour decreases in the physical presence of observers [preprint]. PsyArXiv. https://doi.org/10.31234/osf.io/gxu96

Kroher, M., & Wolbring, T. (2015). Social control, social learning, and cheating: Evidence from lab and online experiments on dishonesty. *Soc. Sci. Res.*, *53*, 311–324. https://doi.org/10.1016/j.ssresearch.2015.06.003

Leisge, K., Heggenberger, A., Kaczmarek, C., Pitsch, W., & Schaefer, S. (2025). Tracing the lines of deceit. Male cheating behavior increases in online versus face-to-face environments over time. *Acta Psychol.*, *259*, 105373. https://doi.org/10.1016/j.actpsy.2025.105373

Leisge, K., Kaczmarek, C., & Schaefer, S. (2024). How often do you cheat? Dispositional influences and intrapersonal stability of dishonest behavior. *Front. Psychol.*, *15*, 1297058. https://doi.org/10.3389/fpsyg.2024.1297058

Liu, J., Shen, Q., Zhang, J., Beyens, U., Cai, W., Decety, J., & Li, H. (2021). The Difference Spotting Task: A new nonverbal measure of cheating behavior. *Behav. Res. Methods*, *53*(5), 1935–1944. https://doi.org/10.3758/s13428-020-01526-w

Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. *J. Mark. Res.*, *45*(6), 633–644. https://doi.org/10.1509/jmkr.45.6.633

Mitra, A., & Shahriar, Q. (2020). Why is dishonesty difficult to mitigate? The interaction between descriptive norm and monetary incentive. *J. Econ. Psychol.*, 80, 102292. https://doi.org/10.1016/j.joep.2020.102292

Mol, J. M., van der Heijden, E. C. M., & Potters, J. J. M. (2020). (Not) alone in the world: Cheating in the presence of a virtual observer. *Exp. Econ.*, *23*(4), 961–978. https://doi.org/10.1007/s10683-020-09644-0

Nieper, A. S., Beersma, B., Dijkstra, M. T. M., & van Kleef, G. A. (2025). When and why does observability increase honesty? The role of gossip and reputational concern. *Judgm. Decis. Mak.*, *20.* https://doi.org/10.1017/jdm.2024.10

Oda, R., Kato, Y., & Hiraishi, K. (2015). The Watching-Eye Effect on Prosocial Lying. *Evol. Psychol.*, *13*(3), 1474704915594959. https://doi.org/10.1177/1474704915594959

Pfattheicher, S., Schindler, S., & Nockur, L. (2019). On the impact of Honesty-Humility and a cue of being watched on cheating behavior. *J. Econ. Psychol.*, *71*, 159–174. https://doi.org/10.1016/j.joep.2018.06.004

Pillutla, M. M., & Murnighan, J. K. (1995). Being fair or appearing fair: Strategic behavior in ultimatum bargaining. *Acad. Manag. J.*, *38*(5), 1408–1426. https://doi.org/10.5465/256863

R Core Team. (2022). *R: A language and evironment for statistical computing* (Version 4.2.0) [software]. R Foundation for statistical computing. https://www.R-project.org/

Rosenbaum, S. M., Billinger, S., & Stieglitz, N. (2014). Let's be honest: A review of experimental evidence of honesty and truth-telling. *J. Econ. Psychol.*, *45*, 181–196. https://doi.org/10.1016/j.joep.2014.10.002

Thielmann, I., & Hilbig, B. E. (2019). No gain without pain: The psychological costs of dishonesty. *J. Econ. Psychol.*, 71, 126–137. https://doi.org/10.1016/j.joep.2018.06.001

van Bommel, M., van Prooijen, J.-W., Elffers, H., & van Lange, P. A. (2012). Be aware to care: Public self-awareness leads to a reversal of the bystander effect. *J. Exp. Soc. Psychol.*, *48*(4), 926–930. https://doi.org/10.1016/j.jesp.2012.02.011

Waeber, A. (2021). Investigating dishonesty-does context matter? *Front. Psychol.*, *12*, 684735. https://doi.org/10.3389/fpsyg.2021.684735