Original Articles and Reviews

A Hitchhiker's Guide to Translation – Ideas for Fostering and Disseminating (Clinical) Translational Psychology

Max Berg[1], Kristina Suchotzki[2], Johannes Zimmermann[3], Christian J. Merz[4], Katharina Szota[5,6], Holger Brandt[7], Gesa Hartwigsen[8,9], Tania M. Lincoln[10], Andreas Mokros[11], Miriam Gade[12], Cornelia Niessen[13], John Rauthmann[14], Stefanie Hoehl[15], Thomas Kubiak[16], Thomas Franke[17], Lena Frischlich[18], Juliane Degner[19], Ellen Matthies[20], Jörn R. Sparfeldt[21], Winfried Rief[1], Anke Haberkamp[1,22,23] and the PsyChange Network[1,6,22,24]

[1]Clinical Psychology Group, Department of Psychology, University of Marburg, Germany
[2]Legal Assessment Psychology Group, Department of Psychology, University of Marburg, Germany
[3]Individual Differences and Personality Psychology Group, Department of Psychology, University of Kassel, Germany
[4]Department of Cognitive Psychology, Institute of Cognitive Neuroscience, Faculty of Psychology, Ruhr University Bochum, Germany
[5]Clinical Child and Adolescent Psychology Group, Department of Psychology, University of Marburg, Germany
[6]Department of Psychology, Goethe-University Frankfurt, Germany
[7]Psychometrics Group, Methods Center, Faculty of Economics and Social Science, University of Tübingen, Germany
[8]Max Planck Institute for Cognitive and Brain Sciences, Leipzig, Germany
[9]Cognitive and Biopsychology Group, Wilhelm-Wundt Institute of Psychology, Leipzig University, Germany
[10]Clinical Psychology and Psychotherapy, Faculty of Psychology and Movement Science, University of Hamburg, Germany
[11]Personality, Assessment, and Legal Psychology Group, Faculty of Psychology, University of Hagen, Germany
[12]General Psychology Group, Department of Psychology, Medical School Berlin, Germany
[13]Work and Organizational Psychology Group, Psychology Department, Friedrich-Alexander University of Erlangen-Nürnberg, Germany
[14]Department of Psychology, University of Munich, Germany
[15]Faculty of Psychology, University of Vienna, Vienna, Austria
[16]Health Psychology Group, Department of Psychology, University of Mainz, Germany
[17]Engineering Psychology Group, Institute for Multimedia and Interactive Systems, University of Lübeck, Germany
[18]Digital Democracy Centre, University of Southern Denmark, Odense, Denmark
[19]Social Psychology Group, Faculty of Psychology and Human Movement Science, University of Hamburg, Germany
[20]Environmental Psychology Group, Department of Psychology, University of Magdeburg, Germany
[21]Chair of Diagnostics, Counseling, and Intervention, Department of Educational Science, Saarland University, Germany
[22]Clinical Psychology Group, Department of Psychology, Justus-Liebig University of Gießen, Germany
[23]Experimental Psychopathology Group, University of Witten/Herdecke, Germany
[24]School of Human Sciences, Department of Psychology, Osnabrück University, Germany

Abstract: Although evidence-based psychological treatments have received wide recognition as established interventions for numerous conditions, challenges concerning their availability, efficacy, and dissemination remain. During the last decades, numerous fields in medicine have improved their treatments by adopting a translational perspective that integrates research from different basic and applied fields. Systematic meta-research does, however, show that only a minority of evidence-based treatments in clinical psychology are grounded in (or derived from) basic psychological research. To facilitate communication between clinical scientists and other psychologists, researchers from the University of Marburg conducted semi-structured interviews with spokespersons of different subfields of the German Psychological Society. From these interviews, recommendations, and ideas for improving translational psychology were collected. This integrative article is the result of an iterative consensus-building process with the interviewed experts. It summarizes insights and derives useful guidance for novel translational research projects. We discuss the opportunities and challenges of translational psychology and provide explicit instruction on how to transfer basic psychological research into applied research and vice versa. We provide recommendations regarding the incorporation of translational psychology into higher education curricula.

Additionally, we explore ways to enhance scientific integrity and keep pace with rapid digital transformation in our field. Finally, we present a concise overview of science dissemination and explore how translational psychology contributes to the resolution of pressing (societal) issues.

Keywords: translational psychology, scientific validity, digital transformation, science education, dissemination

Evidence-based psychotherapy has become an established treatment for numerous mental disorders (Cuijpers et al., 2020; Kindred et al., 2022; Mavranezouli et al., 2020) and is preferred over pharmacotherapy by the majority of patients (McHugh et al., 2013). Psychotherapy has also become a treatment option for complex biopsychosocial conditions such as insomnia (Hertenstein et al., 2022) or chronic pain (Ho et al., 2022). In addition to the success of psychotherapy itself, there is an increasing emphasis on implementing policies that are informed by psychology to influence health-related behavior (such as dieting habits: Wendt et al., 2023). The clinical field has observed the widespread implementation and continuous improvement of affordable psychological treatments in large dissemination projects (Clark, 2018). Currently, efforts are being made to enhance the effectiveness of therapy through the implementation of routine progress monitoring (Lambert et al., 2018). Moreover, recent years have witnessed the emergence of novel conceptual frameworks for understanding mental disorders (Eaton et al., 2023; Rief et al., 2023). Accordingly, there has been a shift in diagnosis moving away from traditional "latent disorder" models (Hayes & Hofmann, 2020) and towards approaches such as the Research Domain Criteria (RDoC: Insel, 2014), the Hierarchical Taxonomy of Psychopathology (Kotov et al., 2022; Ruggero et al., 2019), or a complex systems perspective (Borsboom, 2017; Hofmann et al., 2016).

Despite such steady development in assessment and dissemination, clinical psychology faces substantial challenges. While psychotherapy is demonstrably effective, current evidence-based approaches still struggle with considerable patient dropout (Cooper & Conklin, 2015), subgroups of patients deteriorating under treatment (Cuijpers et al., 2018), and with notable relapse rates (Levy et al., 2021; Otte, 2008). Consequently, more ambitious research is needed to further improve the situation (Rief et al., 2024).

In fields such as oncology or vaccine development, the adoption of a translational approach has led to substantial outcome improvements (Chaudhary et al., 2021; Doroshow & Kummar, 2014). Translational psychology (TP) research can be defined as "the multidirectional integration of basic research, patient-oriented research, and population-based research, with the long-term aim of improving the health of the public" (Rubio et al., 2010, p. 471). Rubio and colleagues distinguished three subtypes of translation (T1–T3):

- T1 research enables the transition between basic and patient-oriented research.
- T2 research promotes the link between patient-oriented and population-based research.
- T3 research directly links basic and population-based research.

In psychology, an example of T1 includes how basic research on the behavioral and molecular mechanisms of anhedonia could be translated into clinical trials to develop new treatments for patients dealing with psychosis. Studies introducing new methods of measuring effort-based decision-making (Reddy et al., 2015) have inspired research that aims to understand and alleviate anhedonia (Berg et al., 2023; Renz & Lincoln, 2022). An example of T2 are studies on how patient-oriented research regarding the efficacy of cognitive-behavioral therapy (CBT) for depression (Cuijpers et al., 2019) can inform population-based research to evaluate the long-term societal benefits of therapeutic interventions. For example, studies regarding the effectiveness of CBT in alleviating mental health problems (Singla et al., 2017) can help with the implementation and long-term evaluation of effective, adapted approaches (Patel et al., 2018) in low and middle-income countries (Bhat et al., 2022). T3 examples include studies on how population-based analysis can directly inform treatment decisions. Saunders et al. (2020) utilized a latent profile approach to identify a subgroup of patients in the "English National Health Service Talking Therapies for Anxiety and Depression Program" whose therapy outcome was poor. Scientists then developed a new treatment that combined psychotherapy with employment support. Patients who took up the augmented treatment had substantially improved recovery rates (Thew et al., 2024).

Translation should not be seen as a one-way street from basic to applied research but should entail sufficient reverse translation (Rief et al., 2024). For example, in contrast to many classical theories, which conceptualized test anxiety as a general, domain-overarching concept ("Either you are more or less anxious about most achievement evaluations, or you are not."), field research from applied researchers suggested that contextual factors, such as specific school subjects, should be considered (Sparfeldt et al., 2013).

While translational approaches are already frequently employed in neuroscience (Ressler et al., 2022; Yuan et al., 2019), a bibliometric analysis revealed that *translational psychology* is not a frequently used term in psychology (Bittermann et al., 2025). The same study also revealed that most translational work is conducted between biological

psychology/neuroscience and clinical psychology. Moreover, an analysis of the frequency with which findings from basic psychological research are incorporated into evidence-based therapeutic approaches (T1 and T2 research) also revealed a suboptimal status quo. Only 23% of contemporary treatments showed a "very strong link" to basic psychology, while an additional 20% displayed a "strong link" (Ehring et al., 2022). In summary, these results suggest that there is room for improvement in translational collaboration, both in terms of the variety of psychological subdisciplines involved and the (clinical) translation of the results itself.

Nevertheless, fruitful translational collaborations with personality psychologists have led to novel ideas for conceptualizing and measuring personality psychopathology that were integrated into diagnostic systems (Krueger, 2013; Wright & Hopwood, 2022; Zimmermann et al., 2019). Promising biopsychological approaches encompass optimizing treatments by acknowledging hormonal systems (Merz & Wolf, 2022) or by maximizing belief updating (Craske et al., 2022; Kirchner et al., 2024; Rief et al., 2022). Other biopsychological ideas include the adaptation of exposure interventions to sleep cycles (Kleim et al., 2014; Pace-Schott et al., 2012) and redefining mental disorders under the umbrella of Bayesian brain theories (Berg et al., 2022; Herzog et al., 2022; Smith et al., 2021).

To foster collaboration and facilitate translational research in psychology, we conducted online discussions, each involving one member from the PsyChange network and one to two experts from different subfields of the German Psychological Society (DGPs). We sought to ascertain the experts' views on the following topics:

(1) What strategies can be employed to enhance the impact of basic science on applied research, particularly in the field of clinical psychology?
(2) What measures should the applied psychological subfields implement to facilitate a successful reverse translation?
(3) What are the obstacles to translational research within and beyond academia? What strategies can be employed to address these challenges?
(4) How does the rapid digital transformation of society affect psychology? How will this change translational research efforts?
(5) What strategies can be employed to facilitate the integration and implementation of psychological research into society?

The insights gained from the discussions and a subsequent iterative consensus-building process have been integrated into this integrative article. The objective of this work is to analyze and evaluate the key dimensions of TP, offering a compendium of recommendations.

Methods

The idea for this work was developed by the PsyChange network, an association of scientists that developed new perspectives for clinical psychology (Rief et al., 2024; Stangier et al., 2024). For this study, PsyChange members (either MB or AH) interviewed 18 spokespersons of 14 psychological subfields organized in the DGPs. These were: Biological Psychology and Neuropsychology (CM, GH), Clinical Psychology and Psychotherapy (KSz, TL), Developmental Psychology (SH), Personality Psychology/Differential Psychology and Psychological Assessment (JR, JZ), Educational Psychology (JS), Engineering Psychology (TF), Environmental Psychology (EM), Experimental Psychology (MG), Health Psychology (TK), Legal Psychology (AM, KSu), Media Psychology (LF), Psychological Methods and Evaluation (HB), Social Psychology (JD), as well as Work and Organizational Psychology (CN). Interviews were conducted online (except for one face-to-face interview) between March and July 2023.

All discussions utilized a semi-structured format, addressing various aspects of TP. As the members of the PsyChange network considered digital transformation to be a particularly important aspect of future (translational) research, the interview guide also included a section on this topic. An English translation of the interview guide is presented in the Electronic Supplementary Material (ESM 1). All interviewees gave consent to the recording and transcription process. The discussions had a mean duration of 57.60 min (*SD* = 18.41 min, range: 32–89 min).

In some cases, we decided to include a second interviewee in the interviews: For clinical psychology, we interviewed an expert in child and adolescent psychotherapy (KSz) and an expert in adult psychotherapy (TL). For personality psychology, interviewed an additional expert in psychological assessment with extensive clinical expertise (JZ). Similarly, for biological psychology, we had an expert with substantial clinical (CM) and an expert with more of an outside view of clinical psychology (GH). In the case of legal psychology, both the spokesperson (AM) and the deputy spokesperson (KSu) were willing to participate, so we took the opportunity to interview both.

We employed a semi-automated transcription process (Trint Limited, 2023). After transcription, the coordinating team (MB, AH, and WR) jointly developed a first summary draft based on the most prominent topics of the previously held discussions. This draft was subjected to a rigorous critical assessment and underwent substantial modification by the DGPs experts in a series of discussion rounds. All interviewees were, therefore, listed as co-authors of this article. For this iterative process, the Marburg team sent the first version of the draft of this article to the previously interviewed co-authors in October 2023, received suggestions

for improvement by November 2023, and repeated this updating process in December 2023 and February 2024, before sending a pre-final version for a final round of updates and approval in May 2024. During peer review, we repeated the updating process in February and March 2025. In addition, the DGPs President and First Vice President provided a statement on behalf of the Executive Board regarding the societal importance of TP in January 2024 (see Figure 1).

Given the iterative article development process used here, we felt that a more structured approach, such as qualitative content analysis, did not serve our purposes as we aimed to develop an article in collaboration with the DGPs experts that would evolve through an iterative process into a consensus paper. As the authors of this article come from different backgrounds in psychology, a qualitative content analysis would likely have led to disparate descriptions of different viewpoints for improving TP instead of a more unified vision. Instead, we opted for a co-creative process deeply rooted in participants' expertise. We adhered to qualitative research criteria (Stenfors et al., 2020; Tong et al., 2007; Yadav, 2021) by selecting a comprehensive sample to answer the research question, documenting our methods and conclusions transparently, and through the iterative validation of the article with all interviewees.

In the next section, we commence the discussion by describing the multifaceted nature of psychology and by offering ideas to foster translational research despite the considerable philosophical, methodological, and terminological heterogeneities within our field. Afterwards, we provide a short overview of the scientific validity crisis in psychology and present ideas for improvement. The topic of reproducible, replicable, and generalizable research was not anticipated a priori, but emerged as a central focus of many of the discussions and was, therefore, included in this work. We also consider the opportunities and obstacles that have arisen in our field due to digital transformation before concluding our discussion with an account of "third mission" topics, such as dissemination and public outreach.

Results and Discussion

The Multifaceted Nature of Psychology

Psychology encompasses diverse research areas, methodologies, terminology, models, techniques, and multiple theoretical frameworks. While this diversity makes psychology a field with a wide range of potential applications, it also poses significant challenges to translational collaboration. Based on our interviews, we have compiled three central challenges.

Terminological Confusion in Psychology

One problem is the partial absence of standardized terminology in psychology. This can even be true for important core concepts (Leising et al., 2022; Zagaria et al., 2020). To illustrate, consider the term "mental disorder". In biologically oriented journals, one may encounter descriptors such as "brain disorder", or "neuropsychiatric disorder". Conversely, in clinical journals, one may find descriptors such as "mental health problem" or "psychological disorder". However, the issue is not merely a matter of differing terminology. Subfields tend to formulate their own microtheories without addressing concepts that span different psychological fields. For example, perspective-taking, theory of mind, cognitive aspects of empathy, and mentalizing are rarely linked to an overarching construct (Freeman, 2016). If psychologists are unable to reach a consensus on key concepts, models, or theories, the integration of research into existing knowledge can become difficult because the same concepts do exist under different names ("jangle fallacy": Lawson & Robins, 2021). Notably, scientists may also encounter difficulties if they hastily assume that similar-looking constructs are identical ("jingle fallacy": Lawson & Robins, 2021). Both the jingle and jangle fallacies are particularly relevant for translational projects, as subject-specific terminology may not be clear to all parties involved. Furthermore, psychological terms themselves are malleable and change their meaning over time. Evidently, terms denoting suffering or disorder, in particular, have become more encompassing, including more and less severe variants – a phenomenon labeled as "concept creep" by Haslam (2016).

Research Methodologies Can Differ Between Subfields

Psychology can be characterized as a field of various differing methodologies. Our field uses both quantitative and qualitative data and data sources include but are not limited to: Actual behavior and its traces, implicit and indirect assessments, observations by experts, physiological signals, strangers' impressions, informant knowledge (e.g., from peers or family), analyses of digital traces, experience sampling and ambulatory assessment, or self-reports (Rauthmann, 2023). Some psychologists assess how humans think, feel, and behave in general ("What can we learn about language from brain stimulation?"; Hartwigsen, 2015). Others focus on subgroup differences ("Can we predict the response of different depression subtypes towards CBT?"; Simmonds-Buckley et al., 2021) or individuals ("Can we show effects of psychological therapy in individual patients?"; Ong et al., 2022; Schemer et al., 2018). Some are interested in cultural ("What are the psychological consequences of the degree of deviant behavior tolerance?"; Gelfand et al., 2011) or institutional effects ("How is

organizational culture impacting mental health?"; Dextras-Gauthier et al., 2012). Sometimes, the research question is used to showcase the capabilities of a method or measurement procedure ("Using psychological examples to illustrate a forecasting procedure with intensive longitudinal data": Kelava et al., 2022).

The focus on certain methods of data collection can also be a result of subfield-specific requirements. In forensic psychology, it is necessary to collect data that cannot be manipulated by the test person (Mokros et al., 2015; Suchotzki et al., 2017). This divergence in focus frequently coincides with markedly divergent methodologies. Of note, it will probably never be advisable (or possible) to completely bridge the differences in the methodologies used, precisely because our field combines basic and applied research and examines (human) experience and behavior from different perspectives. Having those different viewpoints and methodologies is certainly a central strength of psychology. Nevertheless, they can also complicate translational efforts because the learning process of each other's methods and methodologies can be quite time-consuming and, thus, pose a significant challenge for researchers. It has to be worthwhile for researchers to engage with a particular method or approach, considering the substantial time constraints in academia.

Lack of Exchange Between Subfields

Many psychological subfields aim to change attitudes and behavior. A personality psychologist might want to assist individuals in modifying aspects of their personality traits (Stieger et al., 2021), an educational psychologist may be interested in showing how the results of intelligence tests can be improved (Schneider et al., 2020), or that certain interventions could increase working memory, epistemic beliefs, motivation, or inquiry competencies (Gade et al., 2017; Schiefer et al., 2021). An environmental psychologist may seek to identify effective strategies for reducing people's carbon dioxide emissions (Hunecke et al., 2001) or to determine how to initiate and strengthen policy support (Grelle & Hofmann, 2023). A developmental psychologist might be interested in the link between parent-infant communication patterns and children's subsequent language abilities (Nguyen et al., 2023). A work and organizational psychologist might aim to change leader behavior, and dysfunctional work routines or help people to adapt to workplace changes (Niessen & Lang, 2021; Niessen et al., 2010), while a media psychologist might want to explore counter-strategies for combating propaganda (Frischlich et al., 2018). Indeed, psychologists commonly seek to alter cognitions, emotional states, desires, or behavioral patterns through effective interventions. Despite these shared objectives, there often remains a gap in terminology and a lack of robust exchange between subfields and while many subdisciplines are interested in changing some attitudes and behaviors, the concrete objectives can be quite diverse.

Recommendations

To foster fruitful translational cooperation, we recommend the following:

Unify Terminology and Think About Fundamental Assumptions

Psychological subfields often have different foci regarding their preferred methods and methodologies. Consequently, it is advisable for research consortia to explicitly describe which assumptions and theories underlie the joint collaborative project and to agree on a common scientific language (Gray, 2017). Without such considerations, joint projects might quickly dissolve into a loose collection of what are, in principle, very different research agendas.

Use Concepts With a Connection to Multiple Subfields

There is a need for precise definitions in empirical research and reviews to avoid misconceptions. Ideally, applied scientists should rely on concepts that have demonstrated their utility in basic psychology, and basic scientists should strive to explain the basis of concepts that have shown their utility in applied subfields (Elson et al., 2023).

Many variants of personality disorders can be described with the terminology of personality psychology (Schneider et al., 2022; Zimmermann et al., 2019). Similarly, re-experiencing, a symptom of posttraumatic stress disorder (PTSD), has been linked to perceptual priming and was described with terminology from general psychology (Brewin, 2014). Thus, we recommend that applied researchers carefully screen the literature for concepts within basic psychology and from other applied subfields that might be linked to their own concepts (also to reduce concept proliferation: Elson et al., 2023).[1] Additionally, we also encourage translational consortia to write reviews with an emphasis on explaining applied phenomena in the terminology of basic psychology.

Sometimes the diversity *within* a subdiscipline needs to be bridged before applied phenomena can be described in basic psychological terms. An oversimplified way of finding the best theory in a subfield would be that if multiple theories are available, the one that explains the data better and/or more parsimoniously is chosen. This way of finding the "best theories" only works if different theories predict different outcomes, or if interventions derived from

[1] There are also arguments in favor of concept proliferation (Iliescu et al., 2024), particularly to foster validity, self-correction ability, and cultural inclusivity.

competing theories produce different outcomes. In clinical psychology, however, there are myriad examples of seemingly divergent theories about psychopathology or therapy that led to treatments working comparably well. In such cases, it could be relevant to dismantle complex treatment packages. Researchers should search for commonalities between different theories and treatments before engaging in translational research.

An example from PTSD research might be illustrative: There are now many evidence-based treatments for PTSD, which appear to be quite different (Schnyder et al., 2015). Some of them include in vivo exposure, and others do not. Some focus on the most threatening aspects of traumatic events while others have a more narrative, autobiographical approach. Despite these differences, clinical researchers of state-of-the-art PTSD treatments postulated that there are six common factors of successful PTSD therapy (psychoeducation, emotion regulation, imaginal exposure, cognitive restructuring, working through unpleasant emotions, and influencing memory processes: Schnyder et al., 2015). Similar attempts to identify common factors have also been made regarding the description of mechanisms shared between different schools of therapy (Jennissen et al., 2018; Lutz et al., 2024; Taubner & Sharp, 2024). To conclude: Before engaging in translational research, clinical psychologists should also strive to think deeply about (and potentially unify) relevant concepts within their subdiscipline. To be fair, this is not just a problem of clinical psychology, but consensus (in theories, but also concepts, terms, methods, etc.) would also need to be sought in other subdisciplines of psychology (Leising et al., 2024).

Collect Data With Different Subfields in Mind

In collaborative projects, data should be collected that is interesting for all parties involved. In TP projects, it is beneficial for basic researchers to gather application-relevant variables, such as clinical data, whilst applied researchers should measure variables of interest for basic scientists. While such collaborative data collection is valuable, an even more powerful approach for long-term projects would be to attempt true unification. This entails gathering data that *inherently* piques the interest of different subfields, thereby transcending "tit for tat" data collection. By considering how to integrate relevant concepts and methodologies across subfields, we can aspire to foster a comprehensive understanding that is mutually beneficial to both basic researchers and applied scientists.

Adopt Multimodal and Intensive Longitudinal Measurements

If clinicians in translational projects also collect other psychological, social, or biological variables in addition to psychopathological variables, the results of the studies become more interesting for non-clinical fields. Additionally, some scientific questions cannot be answered by solely relying on pre-post designs and require intraindividual effect estimates. For example, empirical research suggests that the results of group-level research cannot be easily translated to describe the behavior of the individual person (ergodicity problem: Fisher et al., 2018). Especially in projects that care about individual differences, it is advisable to collect multimodal longitudinal data intensively, while also considering participant burden and monetary costs (Hamaker & Wichers, 2017).

Explore the Human Universals of Behavior Change

An interesting approach to gathering insights into universal principles of behavior change might be to test similar intervention strategies (such as reinforcement learning or nudging) across psychological subfields. Examining the similarities and differences in effectiveness can teach us more about contextual versus universal factors of behavior change. These research initiatives should involve basic researchers to ensure that interventions align with foundational concepts of psychology. However, it is equally important to include experts from (different) applied fields, making such projects fundamentally translational.

Utilize the Teaching Expertise of Different Subfields

To facilitate the advancement of psychology, it is imperative to leverage the teaching expertise across different subfields and to integrate different perspectives into academic courses. For instance, within a clinical course, inviting a methodologist to elucidate the statistical underpinnings of machine learning for diagnostic classification could enrich students' understanding of the topic (Dwyer et al., 2018). Applied researchers can reciprocate by participating in methodological seminars, demonstrating the practical applications of statistical methods. Consequently, we advocate for the frequent inclusion of interdisciplinary sessions in academic seminars. In some cases, extending such invitations to representatives from less prominent subfields can significantly enhance the awareness of students regarding those research areas. For instance, in countries like Germany, where faculties prioritize core subjects, there may be a tendency to overlook smaller subfields such as environmental, media, or engineering psychology. Embracing a more inclusive approach can bridge this gap. An alternative strategy involves adopting an integrated approach, where specific topics – such as emotion regulation – are taught collaboratively by experts from various subfields, including developmental psychology, social psychology, organizational psychology, and clinical psychology.Translational teaching could also follow the example of translational research where collaborations between psychological subdisciplines already occur (especially between clinical and biological psychology: Bittermann et al., 2025).

Consider the Role of Academic Structures

Translational research in psychology is not always encouraged. For example, research in clinical psychology is frequently published in disorder-specific journals. However, these publications may not attract researchers outside the clinical subfield. Thus, it seems beneficial to entertain the idea of complementing, but by no means replacing, specialized journals with transdisciplinary or translational publications. Preferably, these translational journals could be oriented towards the concepts frequently used in different branches of psychology. For example, a "journal of emotion regulation" seems quite welcoming for research from diverse subfields. A similar principle may be applicable to scientific conferences. Specialized conferences do play an important role because they help communicate cutting-edge research to an expert audience. However, even at a specialized scientific conference with a focus on trauma research, it seems advisable to reserve one of the keynotes for a scientist from another subfield who employs a distinct approach to the study of trauma. In conclusion, we posit that conferences and scientific publications have the potential to contribute more to the advancement of TP by welcoming contributions from a wider range of subfields. Another recommendation is to support TP with the help of national and international psychological societies. Psychological societies should also have a vested interest in supporting cooperation between their subdivisions. This can also be derived from the DGPs President/First Vice President statement (see Figure 1).

Enabling Reproducible, Replicable, and Generalizable Translational Research

Like many other fields, psychology struggles with ensuring different aspects of scientific credibility including reproducibility (re-running the analyses leads to the same results), replicability (re-conducting the same study leads to comparable results), and generalizability (the results of many studies can be integrated into a coherent picture; Nosek et al., 2022). Based on our discussions, we confer ideas for alleviating four issues:

Insufficient Reporting Standards Can Impede Reproducibility

Experimental procedures in psychology can be complex. For instance, the precise region of stimulation in transcranial direct current stimulation studies or details regarding the sampling procedure that is used in surveys may not be immediately apparent from a paper's methods section. This issue is of particular interest for translational research because some procedures and methods do not have comparable prevalence and/or standardization in different subfields, thereby increasing the likelihood of misunderstandings if descriptions do not have a sufficient level of detail. Furthermore, in numerous papers, data and/or code are not shared (Nosek et al., 2022). Even when data and code are shared, achieving computational reproducibility is oftentimes not possible (Obels et al., 2020).

Replication Rates Are Unsatisfactory

Like many fields (Aguinis et al., 2017; Eklund et al., 2016; Prinz et al., 2011), psychology suffers from a replicability crisis, meaning that the results of many experiments have not reliably replicated across samples, research groups, and laboratories (Klein et al., 2018; Nosek et al., 2022; Open Science Collaboration, 2015). The issue of insufficient replicability was also shown to impede translational efforts (Elliott et al., 2021; Specht, 2019).

User Degrees of Freedom Can Lead to Inflated False-Positive Rates

Typically, there are many researcher degrees of freedom regarding the application of a statistical method (Wicherts et al., 2016). Even for simple applications, there are oftentimes multiple tests available. A recent simulation study (Stefan & Schönbrodt, 2023) indicated that systematic permutation through available test results in inflated false positive rates, even when the requirements for all compared statistical tests are met. Under real-world conditions where complex models with many researcher degrees of freedom are used (also with respect to participant exclusion criteria: Lonsdorf et al., 2019) and assumptions of tests are violated, this problem can grow even larger, especially when researchers *misuse* these degrees of freedom to gather "significant" results (*p-hacking*). Thus, a combination of researcher degrees of freedom and the contemporary incentive system of science (Jannot et al., 2013) likely contributes to poorly replicable research.

Questionable Measurement and Preprocessing Practices Can Harm Generalizability

Non-trivial preprocessing pipelines are frequently found in different subfields. Benchmark studies have indicated that the outcome of studies involving ecological momentary assessments (Weermeijer et al., 2022) and subsequent network modeling (Siepe & Heck, 2023), reaction time measures (Moris Fernandez & Vadillo, 2020), electroencephalography (Robbins et al., 2020), functional magnetic resonance imaging (Lindquist et al., 2019), or electrodermal activity (Bastiaansen et al., 2020) can be significantly influenced by preprocessing choices. In addition to numerous preprocessing choices, questionable psychometric

The executive committee of the German Psychological Society (Deutsche Gesellschaft für Psychologie, DGPs) expresses its profound appreciation for the proactive initiative undertaken by the authors of the present paper. The recommendations derived from the interviews with the spokespersons of our various sections perfectly align with some of the core goals and initiatives of our association:

Firstly, our association is guided by the scientific ideal of an integrative triad encompassing basic research, applied research, and application of research, as it has, among others, been proposed by Kurt Lewin. As translational research, by its very nature, is built around the idea of this integrative triad, we consider translational research to be one of the keys to scientific advancements that can improve public health on a broad scale, and we encourage researchers to pursue this avenue.

Secondly, the German Psychological Society has a longstanding commitment to promoting Open Science, as it is evident, for example, in our active engagement with initiatives such as the German Network of Open Science Initiatives (NOSI), the German Reproducibility Network (GRN), and the international Coalition for the Advancement of Research Assessment (CoARA). Therefore, the recommendations for reproducible, replicable, and generalizable translational research are fully in line with the principles that we consider to be essential for (psychological) science in general.

Thirdly, the authors' suggestions regarding how translational research can and should contribute to the dissemination of scientific knowledge within our society strongly resonate with us. We view outreach to the public, in terms of the "Third Mission", as one of the main responsibilities of our discipline in general, and our scientific association in particular. We are convinced that evidence-based policy should serve as the guiding principle for politics, both within and outside the health care sector and that such evidence-based policy is only possible to the extent that our knowledge is disseminated into the field, that its credibility and importance is accepted within society, and that at least parts of this knowledge itself address questions and problems that are prevalent in our society. Hence, we aim to act as partners for researchers who want to follow the authors' recommendations to communicate with the public.

Finally, we would like to add an important point: In the spirit of the Third Mission, and considering the current global and complex crises such as the climate crisis, wars, terrorism and threats to democracy, psychological translational research, leading to concrete applications, appears particularly relevant. It can contribute in a unique way to a better understanding of and a better handling of these crises, or may even lead to solutions to them. Returning psychology to the crisis-ridden society seems more crucial than ever to us.

Figure 1. Statement from the German Psychological Society (DGPs) Executive Board about the societal importance of translational psychology. The statement was developed by the President (Stefan Schulz-Hardt) and the 1st Vice-President (Eva-Lotta Brakemeier) of the German Psychological Society. It was approved by the executive board. The German Psychological Society is an incorporated association of more than 5,300 qualified psychologists engaged in research and teaching, with the goal of advancing and expanding scientific psychology.

measurement can likewise harm scientific validity (Flake & Fried, 2020). Both phenomena bear a resemblance to the discussion of user degrees of freedom. When the aim is to present "significant" results, coinciding with many alternatives for data processing or measurement, the resulting non-random selection process can jeopardize validity.

Recommendations

Psychological subfields can learn from each other's methodological strengths. We recommend the following:

Whenever Possible, Provide Open Data, and Code

To foster reproducibility, data and code should be openly available (for example, on public repositories). In certain fields however, the publication of multivariate data can present a challenge due to the potential misuse in identifying participants (Finn et al., 2015) or due to the data being protected under special legislation (Chin et al., 2019; Schwartz et al., 2023). However, although it may be impossible to disclose all aspects of the data, one could opt for "less sensitive" data that cannot be trivially misused for identification purposes (Syed, 2024). An alternative approach to the sharing of sensitive data would be to disseminate synthetic datasets, which preserve the statistical properties and the specific relationships of the original data without enabling full access (Quintana, 2020). For a tutorial on ethical data-sharing, see Meyer (2018).

Describe Your Procedures in Detail

To facilitate replication, it is essential to provide a detailed account of the information necessary for replication. Ideally, include materials in the aforementioned open-access repositories. We are aware that journals limit the word count of papers and that a comprehensive description of all the methods could hinder the readers' ability to understand the study's central concepts. Nevertheless, in such situations, we recommend compiling online supplemental materials (e.g., containing codebooks, actual data, scripts or code, further analyses or explanations, and stimuli) that are uploaded to open repositories. This also extends to details of interventions in treatment studies.

Utilize Preregistrations and Registered Reports

Preregistration and registered reports support good research practices. Typically, they are employed to guarantee that researchers adhere to their pre-defined measures, procedural decisions, and hypotheses (Flake & Fried, 2020; Kerr, 1998). Nevertheless, exploratory, non-hypothesis-driven research can yield valuable insights when dealing with large datasets, novel types of data, or new research methods. We do advise that researchers consider using preregistrations and registered reports (that were shown to have a lower rate of "positive" results: Scheel et al., 2021). Pre-registrations are not limited to confirmatory research endeavors but can also extend to exploratory work. Furthermore, we suggest that editors and reviewers examine preregistrations for close alignment with the submitted manuscript.

Conduct Sufficiently Powered Trials and Utilize Causal Inference

One important factor contributing to the unsatisfactory replication rates seems to be related to inadequate statistical power (Szucs & Ioannidis, 2017). In extensive, laboratory-oriented translational research programs, it is therefore often necessary to involve multiple research sites to ensure appropriate sample sizes. Additionally, researchers may also gather data from routine situations and natural experiments and analyze it with causal inference methods (Chatton & Rohrer, 2024). Applications of causal inference can be used throughout the field of psychology (Grosz et al., 2024) and recent clinical studies provide illustrative examples (Felton, 2023; Kaiser et al., 2023). Another possibility could also be the secondary analysis of existing datasets if (meta)data are available according to FAIR (findable, accessible, interoperable, reusable) sharing standards (Wilkinson et al., 2016).

Examine Alternative Modeling Choices

It can be advantageous to demonstrate that a result is generalizable, that is, that different appropriate analysis pipelines find comparable results (Weermeijer et al., 2022). We recommend that researchers use multiverse analyses (Steegen et al., 2016) to compare the outcomes of various analytic approaches (Silberzahn et al., 2018). Another alternative for ensuring the stability of results is many analytical approaches. In these analysis plans, several independent teams analyze the same dataset to answer a specific research question. In our view, such studies are well-suited for large datasets and/or controversial topics (Hoogeveen et al., 2023). Consequently, such analyses could prove particularly advantageous for translational projects, given that they often necessitate the integration of voluminous and complex datasets, as well as the collaboration of researchers with disparate perspectives and methodologies. Aczel et al. (2021) provided guidelines on the topic.

Triangulate Research Questions

To ensure generalizability, it is helpful to show that certain results occur in different contexts and can be demonstrated with different methods. Researchers are recommended to consider mixed-method approaches that combine qualitative and quantitative techniques (Timans et al., 2019). We also suggest that studies should be conducted not only in the laboratory but also translated to field settings and more diverse populations (Jachimowicz, 2022).

Digital Transformation

The emergence of new machine-learning applications and the speed of digital transformation are rapidly transforming

psychology (Adjerid & Kelley, 2018). However, these disruptions are not confined to subfields but also bring about important changes for translational projects, which we outline below.

Digital Transformation Brings New Opportunities

Digital transformation offers new research possibilities, including the option to conduct elaborate online studies. This approach can help researchers reach a wider range of participants (with respect to age, education, and other variables: Gosling & Mason, 2015). Additionally, experiments can be implemented in virtual reality. Such studies have the potential to yield more accurate data, as these settings depict real-world scenarios in which the behavior of interest is observed, yet which can nevertheless be better controlled than field investigations (Degner et al., 2021). Of course, virtual reality settings should always be empirically validated first. Insights into the fine structure of behavior can also be achieved with simulation studies that model agent-agent interactions (Westermann & Banisch, 2024) or formalize symptom dynamics (Robinaugh et al., 2024). Furthermore, smartwatches and other devices allow the recording of bio-signals or behavioral variables (such as everyday activities, localization, or speech) and have proven useful for ecological momentary assessment or passive data collection (Kubiak & Smyth, 2023; Mehl et al., 2024). In addition, automated methods can provide valuable insights into psychological processes by analyzing natural language in educational, workplace, social media, and public communication as well as therapeutic contexts (Atzil-Slonim et al., 2024; Boyd & Schwartz, 2021; Warikoo et al., 2022).

The Advent of Machine Learning Changes Psychology

Since 2015 the number of papers citing machine learning in clinical research has grown exponentially (Graham et al., 2019). On the one hand, many machine learning approaches have been criticized for inflated accuracy estimates and problems with reproducibility (Orru et al., 2019), inherent difficulties with interpretability (Rudin, 2019), and ethical problems (such as algorithms that pick up societal racism and sexism: Zou & Schiebinger, 2018). On the other hand, these algorithms are considered to provide many novel opportunities for (translational) psychology. The use of machine learning could, for example, facilitate several research processes, including the assessment of psychological traits, the prediction of rare or significant events, and possibly also the decision-making process in interventional subfields (Aafjes-van Doorn et al., 2021; Orru et al., 2019; Yarkoni & Westfall, 2017). Also, natural language processing (and its applications, such as Large Language Models or LLMs) has made significant progress during the last years and is now extensively utilized in science (Boyd & Schwartz, 2021; Demszky et al., 2023).

Recommendations

To address the changes introduced by digital transformation, we recommend the following:

Update Computer Science and Statistics Skills

The importance of computer science skills (including a basic understanding of programming/coding) is rapidly growing. Psychology degrees – including those with a focus on applied subfields – should contain sufficient and hands-on courses in statistics, coding, psychometrics, study design, and potentially also courses in the basics of machine learning and application development. Updating relevant coding skills could also facilitate the open science movement, as many programming languages permit the integration of pipelines and procedures that facilitate the fulfillment of open science standards (Ellis & Merdian, 2015; Sprengholz, 2018).

Reflect on Benefits and Risks of LLMs

The widespread use of LLMs necessitates that scholars and students are equipped with an understanding of their current capabilities and limitations (Kasneci et al., 2023). When used responsibly, LLMs can help optimize texts for readability. They can also help to learn computer science by speeding up coding processes or possibly even by providing exercises (Sarsa et al., 2022). Conversely, these models can also be used for unethical purposes such as ghostwriting (Cotton et al., 2023) or data fabrication (Taloni et al., 2023). Especially in sensitive environments, such as in clinical or forensic psychology, special care is needed also because LLMs in clinical contexts often lack crucial information regarding patient safety or even show worrisome behavior like inconsistencies in generated text or hallucinated content (Guo et al., 2024). The application of LLMs should also always follow ethical best practices including reflections about privacy and data security (Renner et al., 2024). Nevertheless, because LLMs are already widely used in universities and have substantial potential for academic writing and scientific coding but also for misuse, teaching staff are advised to familiarize themselves with them, pass on relevant knowledge to students, and establish explicit rules for the use of LLMs within their courses. These considerations also apply to those involved in the scientific publication process (Schwartz et al., 2024).

Collect Passive Data

The sole reliance on self-reports in some fields of psychology was criticized (Andersson, 2023; Rauthmann, 2023). Current technology not only gives us the opportunity to conduct ecological momentary assessment studies (Hall et al., 2021), but also enables the passive collection of data, such as heart rate (Lee et al., 2021), galvanic skin responses (Constant et al., 2016), body temperature (Ciabattoni et al.,

2017), global positioning systems data (Walz et al., 2016), step count (Stanislaus et al., 2020), or internet usage (Mahalingham et al., 2023). This allows researchers to create dense longitudinal datasets based on multimodal data collected in everyday life scenarios.

Combine Data Collection and Digital Intervention

Researchers may opt to store sensor, text, and momentary experience data from individual participants and feed the information into personalized machine-learning models (Jacobson & Bhattacharya, 2022). If the predictive power of such models increases, they could be used in micro-randomized controlled trials (Dempsey et al., 2015) to test for the impact of individual just-in-time adaptive interventions. Such concepts are not confined to clinical science; they also extend to fields like sports and educational psychology. However, in all cases, they should be employed following a meticulous examination of data security concerns and legal constraints.

Societal Responsibility and Dissemination

After discussing the multifaceted nature of psychology and delving into topics of scientific validity and digital transformation, we will briefly discuss the societal responsibility of our field because the dissemination of scientific knowledge is often seen as the final step of successful translational research (Meissner et al., 2020).

Dissemination of Psychological Knowledge Is Relevant

In recent years, calls from society and from psychology itself have become louder, so our field should provide its expertise to alleviate societal problems. Such appeals have been made, for example, in the wake of the COVID-19 pandemic (Bell et al., 2020) and successive vaccination programs (Lincoln & Rief, 2021), different aspects of the climate crisis (Miles-Novelo & Anderson, 2019; Swim et al., 2009; Taylor, 2020), for dealing with misinformation (Sample et al., 2020) or for the challenges posed by the aforementioned digital transformation (Gobel et al., 2022; Hoehl et al., 2024; Schrills & Franke, 2023). In some subfields such as environmental or health psychology, psychologists and their expertise have been integrated into advisory councils (e.g., the German Advisory Council on Global Environmental Change) or invited to collaborate (e.g., by the German Federal Center for Health Education). To maintain its relevance, psychology should strive to disseminate its findings. Dissemination of knowledge, however, poses a challenge to all subfields. For many scientists, publication in a journal is the final step of a study, leading to a substantial gap between research findings and their dissemination. However, the successful dissemination of research findings into societal reality is also a vital part of translational research (Ehring et al., 2022). In clinical psychology, for example, many effective therapeutic interventions are unfortunately not integrated into healthcare systems (Ehring et al., 2022; Fairburn & Wilson, 2013).

Similar research-practice gaps can also be found in educational psychology (Hagermoser Sanetti & Collier-Meek, 2019), work and organizational psychology (Rogelberg et al., 2022), or environmental psychology (Gifford, 2014). Unfortunately, in academia, there are also often insufficient incentives or disincentives for scientific communication with the general public or political circles.

Paucity of Translational Research Funding

In addition to the previously identified challenges associated with the lack of a shared scientific language and common methodological approaches, there is a scarcity of targeted financial resources to encourage researchers to engage in translational research initiatives. At a national level, the German Research Foundation (DFG) mainly supports basic research. In contrast, the Federal Ministry of Education and Research (BMBF), the Federal Ministry of Economics and Climate Action (BMWK) and the Federal Ministry of Labor and Social Affairs (BMAS) mainly support projects with an applied focus. Like national funding schemes, European funding (European Research Council grants) is also typically separated into subfields. Although there are funding opportunities concerning some large translational and transdisciplinary projects for important societal issues (such as climate change), explicit translational funding opportunities in psychology remain scarce.

Recommendations

The following ideas aim to address the societal responsibilities of psychology and to improve dissemination:

Address Research-Practice Gaps

To maintain its relevance, psychology must continue to contribute to the resolution of significant societal issues. As stated, implementation and dissemination into society are – by definition – also a vital part of TP. Whenever scientists find an intervention to be clearly effective, this intervention should be disseminated to the wider society. In clinical fields, the various structured national and international treatment guidelines are an example of such a dissemination process. For example, population-based research in the United Kingdom suggested that providing culture-sensitive care, preferably with the help of culturally diverse therapists, seems to be vital for improving therapy outcomes in minority groups (National Health Service, 2016; Rief et al., 2024). This finding from dissemination research may be of interest not only to clinical scientists but also to political and social psychologists. It also highlights the need for implementation research in general, as

knowledge about the need for more culturally diverse therapists alone will not necessarily change the situation in healthcare systems without the implementation of best practice guidelines and policies for change (National Health Service, 2023). Explicit ideas for dissemination should be addressed early in the scientific process, and respective plans should be outlined already in the planning stage of studies.

The content of successful dissemination of science certainly differs depending on the research project. For methodical subfields, tutorial papers could be suitable, which can ensure that methods and procedures are effectively disseminated in scientific circles. Scientists from intervention-relevant subfields can consider collaborating with non-scientific fields and build so-called science-practitioner networks (Castonguay et al., 2015). Because funding structures in climate change mitigation have long supported transdisciplinary research (Scholz & Stauffacher, 2009), including collaboration across fields and with practitioners, environmental psychology could serve as a role model for the psychological field. Collaborations for dissemination should be implemented in the early career stages of practitioners and scientists, as empirical evidence suggests that younger professionals appear to be more open to relevant learning experiences (Szota et al., 2021).

Preferably, basic research, applied research, and dissemination of research should strive to continuously inform each other to form a closed feedback loop. This means that the results of basic research should be translated into applied research, but translational projects should also entail sufficient backwards translation from applied to basic research. Furthermore, dissemination of research should also be considered early in the process. An example of the successful translation of personality psychology research and clinical research that has already been disseminated into diagnostic manuals is the Alternative Diagnostic and Statistical Manual of Mental Disorders (DSM-5) Model for Personality Disorders (Zimmermann et al., 2019; please refer to Figure 2 for more details).

Communicate With the Public

The dissemination of research should not be limited to professional circles. It is key to consider the interests of target audiences and to adapt science communication when reaching out to the wider public. Fortunately, there are structured guidelines for successful communication with public circles (Ross-Hellauer et al., 2020). We recommend that researchers learn (preferably in a structured way) about effective ways of science communication (Ross-Hellauer et al., 2020) before reaching out to their target audience. It is important to emphasize that efforts to improve psychology also require substantial systemic change and support. Sponsors and policymakers should (continue to) finance large interdisciplinary and translational projects. This

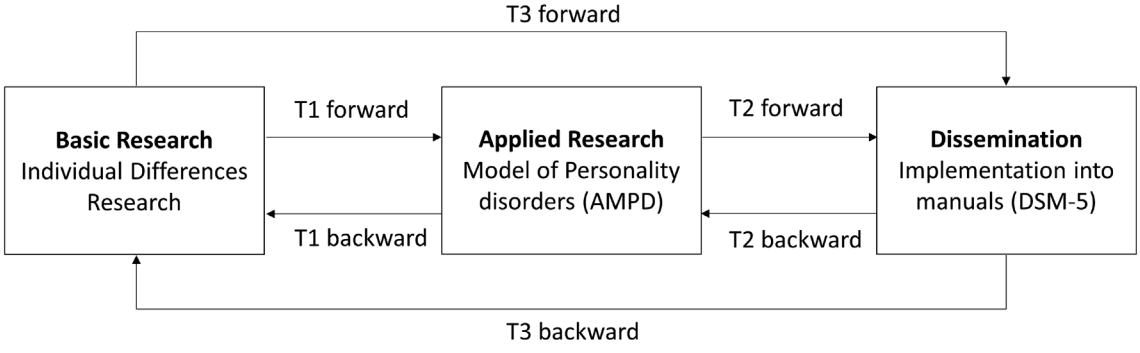


Figure 2. An example for successful translation and implementation of personality psychology ideas into clinical theorizing and practice: This example describes the maladaptive trait model of the Alternative Diagnostic and Statistical Manual of Mental Disorders (DSM-5) Model for Personality Disorders (AMPD: Zimmermann et al., 2019). The different translational processes are described according to Rubio et al. (2010). T1, Transition between basic and applied (e.g., patient-oriented) research; T2, Transition between applied research and real-world applications (e.g., dissemination into routine health care); T3, Direct transition between basic research and real-world applications. Forward = Translation from a lower degree to a higher degree of practical implementation. Backward = Translation of practical knowledge back into the terminology of more foundational subfields. The maladaptive trait model of the AMPD can be seen as a successful example of translation from basic research down to the practice of clinical diagnostic manuals (Freilich et al., 2023). Model development itself can be seen as an example for T1 forward research. It provides five domains of maladaptive personality traits based on principles from personality psychology: (1) Describing characteristics of personality disorders in a short and precise way; (2) Collecting human judgments of such characteristics using self-reports; (3) Conducting a comprehensive analysis regarding the factorial structure of these reports (Rief et al., 2023). The resulting maladaptive trait model was included in the AMPD in section III of the fifth edition of the (DSM-5, T2 forward translation). Current research seems to indicate that maladaptive personality traits show clear links to existing models of personality structure, such as the five-factor model (T1 backward translation: Suzuki et al., 2015). Studies with clinical experts found that the maladaptive trait model was rated as more clinically useful than its predecessor in several respects (T2 backward translation: Morey et al., 2014). Future research will show whether researchers interested in individual differences can learn something from the practical application of this new conceptualization of personality disorders (T3 backward) or if novel ideas in individual differences research may directly influence clinical manuals (T3 forward).

includes updating respective funding schemes to support various translational and dissemination projects as well as to support good science communication. Unfortunately, it is also crucial to think about the potential risk that science communication can bring in politized fields where speaking up publicly has led to the harassment of colleagues (Seeger et al., 2024). This, once more, necessitates the implementation of systemic measures, such as the establishment and continuous support of programs designed to provide support and protection for scientists who are subjected to persecution or harassment.

Limitations and Future Directions

In this article, we discussed several topics of relevance for translational clinical psychology. There are some limitations to our work that warrant a brief discussion. We are aware that each of the topics could have deserved an article on its own, but our intention was to take a bird's eye view regarding the challenges and opportunities for translational research with a special emphasis on clinical psychology. To do justice to the complexity of the issues discussed here, future research could zoom in on different topics and provide more focused and in-depth information, for example, by conducting scoping or systematic reviews. In addition to such articles, researchers could also conduct bibliometric analyses about the status and content of research programs in TP (see, e.g., Bittermann et al., 2025, for an example).

Another limitation arises from the fact that we decided against using systematic qualitative analysis. On the one hand, this allowed us to enter an iterative process in which the domain experts from the DGPs and the clinical psychologists developed this article collaboratively. On the other hand, such a collaborative effort cannot be seen as completely unbiased, especially concerning the topics that were selected for discussion. Future work could therefore use content analyses or expand on existing work that utilizes focus groups (Stangier et al., 2024). This article should be seen as the first step in a process towards enabling more systematic TP research. Future studies are needed to examine the generalizability of topics that were discussed. For example, the themes identified here could help to develop a category scheme for a quantitative content analysis that could then be employed to research in other contexts or inform survey experiments testing the effects of some of the identified barriers in motivating translational engagement.

Next, the composition of each psychological society and the subdivision into specialist groups vary from country to country, possibly making direct comparisons between different countries or research systems difficult. Although we were able to interview the vast majority of the spokespersons of the subdisciplines organized in the DGPs, not all interview candidates participated (Sports Psychology, Traffic Psychology, and History of Psychology are missing). Therefore, this article reflects the consensus view of most, but not all, spokespersons of the DGPs.

Finally, clinical psychology is by no means the only field that can benefit from translational collaboration, but the focus of this integrative article was clinical psychology. This provides the opportunity for groups of psychologists to complement this article with similar work with a different focus. We could imagine, for example, that other intervention-oriented areas of psychology, such as educational psychology, could have a similar interest in the translation of basic findings as clinical psychology, without all the opportunities and barriers discussed here being directly transferable.

Conclusion

This article outlined challenges and opportunities for translational research and provided recommendations with an emphasis on clinical psychology. The conclusions are based on semi-structured interviews with a diverse group of DGPs experts and a subsequent iterative consensus-building process. We aim to encourage further collaboration in psychology, allowing the field to flourish as a dynamic and fascinating area of research. As we look towards the future of psychology, it becomes increasingly clear that translational collaborations hold a key role for the future of psychology, parallel in importance to interdisciplinary efforts.

Electronic Supplementary Materials

The following electronic supplementary material is available with this article at https://doi.org/10.1027/1016-9040/a000555

ESM 1. Interview guidelines.

References

Aafjes-van Doorn, K., Kamsteeg, C., Bate, J., & Aafjes, M. (2021). A scoping review of machine learning in psychotherapy research. *Psychotherapy Research, 31*(1), 92–116. https://doi.org/10.1080/10503307.2020.1808729

Aczel, B., Szaszi, B., Nilsonne, G., van den Akker, O. R., Albers, C. J., van Assen, M. A., Bastiaansen, J. A., Benjamin, D., Boehm, U., Botvinik-Nezer, R., Bringmann, L. F., Busch, N. A., Caruyer, E., Cataldo, A. M., Cowan, N., Delios, A., van Dongen, N. N., Donkin, C., van Doorn, J. B., … Wagenmakers, E. J. (2021). Consensus-based guidance for conducting and reporting multi-analyst studies. *Elife, 10*, Article e72185. https://doi.org/10.7554/eLife.72185

Adjerid, I., & Kelley, K. (2018). Big data in psychology: A framework for research advancement. *American Psychologist, 73*(7), 899–917. https://doi.org/10.1037/amp0000190

Aguinis, H., Cascio, W. F., & Ramani, R. S. (2017). Science's reproducibility and replicability crisis: International business is not immune. *Journal of International Business Studies, 48*, 653–663. https://doi.org/10.1057/s41267-017-0081-0

Andersson, G. (2023). Missed opportunities in clinical psychology: What about running factorial design internet trials and using other outcomes than self-report? *Clinical Psychology in Europe, 5*(2), 1–5. https://doi.org/10.32872/cpe.12063

Atzil-Slonim, D., Eliassaf, A., Warikoo, N., Paz, A., Haimovitz, S., Mayer, T., & Gurevych, I. (2024). Leveraging natural language processing to study emotional coherence in psychotherapy. *Psychotherapy, 6*(1), 82–92. https://doi.org/10.1037/pst0000517

Bastiaansen, J. A., Kunkels, Y. K., Blaauw, F. J., Boker, S. M., Ceulemans, E., Chen, M., Chow, S. M., de Jonge, P., Emerencia, A. C., Epskamp, S., Fisher, A. J., Hamaker, E. L., Kuppens, P., Lutz, W., Meyer, M. J., Moulder, R., Oravecz, Z., Riese, H., Rubel, J., . . . Bringmann, L. F. (2020). Time to get personal? The impact of researchers choices on the selection of treatment targets using the experience sampling methodology. *Journal of Psychosomatic Research, 137*, Article 110211. https://doi.org/10.1016/j.jpsychores.2020.110211

Bell, D. J., Self, M. M., Davis, C., Conway, F., Washburn, J. J., & Crepeau-Hobson, F. (2020). Health service psychology education and training in the time of COVID-19: Challenges and opportunities. *American Psychologist, 75*(7), 919–932. https://doi.org/10.1037/amp0000673

Berg, M., Feldmann, M., Kirchner, L., & Kube, T. (2022). Oversampled and undersolved: Depressive rumination from an active inference perspective. *Neuroscience & Biobehavioral Reviews, 142*, Article 104873. https://doi.org/10.1016/j.neubiorev.2022.104873

Berg, M., Riehle, M., Rief, W., & Lincoln, T. (2023). Does partial blockade of dopamine D2 receptors with Amisulpride cause anhedonia? An experimental study in healthy volunteers. *Journal of Psychiatric Research, 158*, 409–416. https://doi.org/10.1016/j.jpsychires.2023.01.014

Bhat, B., De Quidt, J., Haushofer, J., Patel, V. H., Rao, G., Schilbach, F., & Vautrey, P.-L. P. (2022). The long-run effects of psychotherapy on depression, beliefs, and economic outcomes [Working paper]. *National Bureau of Economic Research*. https://doi.org/10.3386/w30011

Bittermann, A., Petrule, C., Ritter, V., Haberkamp, A., Hofmann, S. G., Rief, W., & the PsyChange Network. (2025). Research on translational psychological treatment: A comprehensive bibliometric analysis. *Clinical Psychology: Science and Practice*. Advance online publication. https://doi.org/10.1037/cps0000256

Borsboom, D. (2017). A network theory of mental disorders. *World Psychiatry, 16*(1), 5–13. https://doi.org/10.1002/wps.20375

Boyd, R. L., & Schwartz, H. A. (2021). Natural language analysis and the psychology of verbal behavior: The past, present, and future states of the field. *Journal of Language and Social Psychology, 40*(1), 21–41. https://doi.org/10.1177/0261927x20967028

Brewin, C. R. (2014). Episodic memory, perceptual memory, and their interaction: Foundations for a theory of posttraumatic stress disorder. *Psychological Bulletin, 140*(1), 69–97. https://doi.org/10.1037/a0033722

Castonguay, L. G., Pincus, A. L., & McAleavey, A. A. (2015). Practice research network in a psychology training clinic: Building an infrastructure to foster early attachment to the scientific-practitioner model. *Psychotherapy Research, 25*(1), 52–66. https://doi.org/10.1080/10503307.2013.856045

Chatton, A., & Rohrer, J. M. (2024). The Causal Cookbook: Recipes for propensity scores, g-computation, and doubly robust standardization. *Advances in Methods and Practices in Psychological Science, 7*(1). https://doi.org/10.1177/25152459241236149

Chaudhary, N., Weissman, D., & Whitehead, K. A. (2021). mRNA vaccines for infectious diseases: principles, delivery and clinical translation. *Nature Reviews Drug Discovery, 20*(11), 817–838. https://doi.org/10.1038/s41573-021-00283-5

Chin, J. M., Ribeiro, G., & Rairden, A. (2019). Open forensic science. *Journal of Law and the Biosciences, 6*(1), 255–288. https://doi.org/10.1093/jlb/lsz009

Ciabattoni, L., Ferracuti, F., Longhi, S., Pepa, L., Romeo, L., & Verdini, F. (2017, January 8–10). *Real-time mental stress detection based on smartwatch* [Paper presentation]. 2017 IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, NV, USA. https://ieeexplore.ieee.org/document/7889247

Clark, D. M. (2018). Realizing the mass public benefit of evidence-based psychological therapies: The IAPT Program. *Annual Review of Clinical Psychology, 14*, 159–183. https://doi.org/10.1146/annurev-clinpsy-050817-084833

Constant, M., Brick, L., Nugent, N., Armey, M., & Mankodiya, K. (2016, November 4–6). *Smartwatch-driven multisensory recorder: Design and testing of a smartwatch-based framework to support psychiatric disorders* [Paper presentation]. 2016 IEEE MIT Undergraduate Research Technology Conference (URTC), Cambridge, USA.

Cooper, A. A., & Conklin, L. R. (2015). Dropout from individual psychotherapy for major depression: A meta-analysis of randomized clinical trials. *Clinical Psychology Review, 40*, 57–65. https://doi.org/10.1016/j.cpr.2015.05.001

Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 1–12. https://doi.org/10.1080/14703297.2023.2190148

Craske, M. G., Sandman, C. F., & Stein, M. B. (2022). How can neurobiology of fear extinction inform treatment? *Neuroscience & Biobehavioral Reviews, 143*, Article 104923. https://doi.org/10.1016/j.neubiorev.2022.104923

Cuijpers, P., Karyotaki, E., de Wit, L., & Ebert, D. D. (2020). The effects of fifteen evidence-supported therapies for adult depression: A meta-analytic review. *Psychotherapy Research, 30*(3), 279–293. https://doi.org/10.1080/10503307.2019.1649732

Cuijpers, P., Noma, H., Karyotaki, E., Cipriani, A., & Furukawa, T. A. (2019). Effectiveness and acceptability of cognitive behavior therapy delivery formats in adults with depression: A network meta-analysis. *JAMA Psychiatry, 76*(7), 700–707. https://doi.org/10.1001/jamapsychiatry.2019.0268

Cuijpers, P., Reijnders, M., Karyotaki, E., de Wit, L., & Ebert, D. D. (2018). Negative effects of psychotherapies for adult depression: A meta-analysis of deterioration rates. *Journal of Affective Disorders, 239*, 138–145. https://doi.org/10.1016/j.jad.2018.05.050

Degner, J., Steep, L., Schmidt, S., & Steinicke, F. (2021). Assessing automatic approach-avoidance behavior in an immersive virtual environment. *Frontiers in Virtual Reality, 2*, Article 761142. https://doi.org/10.3389/frvir.2021.761142

Dempsey, W., Liao, P., Klasnja, P., Nahum-Shani, I., & Murphy, S. A. (2015). Randomised trials for the Fitbit generation. *Significance, 12*(6), 20–23. https://doi.org/10.1111/j.1740-9713.2015.00863.x

Demszky, D., Yang, D., Yeager, D. S., Bryan, C. J., Clapper, M., Chandhok, S., Eichstaedt, J. C., Hecht, C., Jamieson, J., Johnson, M., Jones, M., Krettek-Cobb, D., Lai, L., JonesMitchell, N., Ong, D. C., Dweck, C. S., Gross, J. J., & Pennebaker, J. W. (2023). Using large language models in psychology. *Nature Reviews Psychology, 2*(11), 688–701. https://doi.org/10.1038/s44159-023-00241-5

Dextras-Gauthier, J., Marchand, A., & Haines, V. III (2012). Organizational culture, work organization conditions, and mental health: A proposed integration. *International Journal of Stress Management, 19*(2), 81–104. https://doi.org/10.1037/a0028164

Doroshow, J. H., & Kummar, S. (2014). Translational research in oncology – 10 years of progress and future prospects. *Nature Reviews Clinical Oncology, 11*(11), 649–662. https://doi.org/10.1038/nrclinonc.2014.158

Dwyer, D. B., Falkai, P., & Koutsouleris, N. (2018). Machine learning approaches for clinical psychology and psychiatry. *Annual Review of Clinical Psychology, 14*, 91–118. https://doi.org/10.1146/annurev-clinpsy-032816-045037

Eaton, N. R., Bringmann, L. F., Elmer, T., Fried, E. I., Forbes, M. K., Greene, A. L., Krueger, R. F., Kotov, R., McGorry, P. D., Mei, C., & Waszczuk, M. A. (2023). A review of approaches and models in psychopathology conceptualization research. *Nature Reviews Psychology, 2*(10), 622–636. https://doi.org/10.1038/s44159-023-00218-4

Ehring, T., Limburg, K., Kunze, A. E., Wittekind, C. E., Werner, G. G., Wolkenstein, L., Guzey, M., & Cludius, B. (2022). (When and how) does basic research in clinical psychology lead to more effective psychological treatment for mental disorders? *Clinical Psychology Review, 95*, Article 102163. https://doi.org/10.1016/j.cpr.2022.102163

Eklund, A., Nichols, T. E., & Knutsson, H. (2016). Cluster failure: Why fMRI inferences for spatial extent have inflated false-positive rates. *Proceedings of the National Academy of Sciences, 113*(28), 7900–7905. https://doi.org/10.1073/pnas. 1602413113

Elliott, M. L., Knodt, A. R., & Hariri, A. R. (2021). Striving toward translation: Strategies for reliable fMRI measurement. *Trends in Cognitive Sciences, 25*(9), 776–787. https://doi.org/10.1016/j.tics.2021.05.008

Ellis, D. A., & Merdian, H. L. (2015). Thinking outside the box: Developing dynamic data visualizations for psychology with shiny. *Frontiers in Psychology, 6*, Article 1782. https://doi.org/10.3389/fpsyg.2015.01782

Elson, M., Hussey, I., Alsalti, T., & Arslan, R. C. (2023). Psychological measures aren't toothbrushes. *Communications Psychology, 1*(1), Article 25. https://doi.org/10.1038/s44271-023-00026-9

Fairburn, C. G., & Wilson, G. T. (2013). The dissemination and implementation of psychological treatments: Problems and solutions. *International Journal of Eating Disorders, 46*(5), 516–521. https://doi.org/10.1002/eat.22110

Felton, C. (2023). 13 reasons why probably increased emergency room visits for self-harm among teenage girls. *Sociological Science, 10*, 930–963. https://doi.org/10.15195/v10.a33

Finn, E. S., Shen, X., Scheinost, D., Rosenberg, M. D., Huang, J., Chun, M. M., Papademetris, X., & Constable, R. T. (2015). Functional connectome fingerprinting: Identifying individuals using patterns of brain connectivity. *Nature Neuroscience, 18*(11), 1664–1671. https://doi.org/10.1038/nn.4135

Fisher, A. J., Medaglia, J. D., & Jeronimus, B. F. (2018). Lack of group-to-individual generalizability is a threat to human subjects research. *Proceedings of the National Academy of Sciences USA, 115*(27), E6106–E6115. https://doi.org/10.1073/pnas.1711978115

Flake, J. K., & Fried, E. I. (2020). Measurement Schmeasurement: Questionable measurement practices and how to avoid them. *Advances in Methods and Practices in Psychological Science, 3*(4), 456–465. https://doi.org/10.1177/2515245920952393

Freeman, C. (2016). What is mentalizing? An overview. *British Journal of Psychotherapy, 32*(2), 189–201. https://doi.org/10.1111/bjp.12220

Freilich, C. D., Krueger, R. F., Hobbs, K. A., Hopwood, C. J., & Zimmermann, J. (2023). The DSM-5 maladaptive trait model for personality disorders. In R. F. Krueger & P. H. Blaney (Eds.), *Oxford Textbook of Psychopathology* (pp. 604–627). Oxford University Press. https://doi.org/10.1093/med-psych/9780197542521.003.0026

Frischlich, L., Rieger, D., Morten, A., & Bente, G. (2018). The power of a good story: Narrative persuasion in extremist propaganda and videos against violent extremism. *International Journal of Conflict and Violence, 12*, Article a644. https://www.ijcv.org/index.php/ijcv/article/view/3106

Gade, M., Zoelch, C., & Seitz-Stein, K. (2017). Training of visual-spatial working memory in preschool children. *Advances in Cognitive Psychology, 13*(2), 177–187. https://doi.org/10.5709/acp-0217-7

Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., Lim, B. C., Duan, L., Almaliach, A., Ang, S., & Arnadottir, J. (2011). Differences between tight and loose cultures: A 33-nation study. *Science, 332*(6033), 1100–1104. https://doi.org/10.1126/science.1197754

Gifford, R. (2014). Environmental psychology matters. *Annual Review of Psychology, 65*(1), 541–579. https://doi.org/10.1146/annurev-psych-010213-115048

Gobel, K., Niessen, C., Seufert, S., & Schmid, U. (2022). Explanatory machine learning for justified trust in human-AI collaboration: Experiments on file deletion recommendations. *Frontiers in Artificial Intelligence, 5*, Article 919534. https://doi.org/10.3389/frai.2022.919534

Gosling, S. D., & Mason, W. (2015). Internet research in psychology. *Annual Review of Psychology, 66*, 877–902. https://doi.org/10.1146/annurev-psych-010814-015321

Graham, S., Depp, C., Lee, E. E., Nebeker, C., Tu, X., Kim, H. C., & Jeste, D. V. (2019). Artificial intelligence for mental health and mental illnesses: an overview. *Current Psychiatry Reports, 21*(11), 116. https://doi.org/10.1007/s11920-019-1094-0

Gray, K. (2017). How to map theory: Reliable methods are fruitless without rigorous theory. *Perspectives on Psychological Science, 12*(5), 731–741. https://doi.org/10.1177/1745691617691949

Grelle, S., & Hofmann, W. (2023). When and why do people accept public-policy interventions? An integrative public-policy-acceptance framework. *Perspectives on Psychological Science, 19*(1), 258–279. https://doi.org/10.1177/17456916231180580

Grosz, M. P., Ayaita, A., Arslan, R. C., Buecker, S., Ebert, T., Hünermund, P., Müller, S. R., Rieger, S., Zapko-Willmes, A., & Rohrer, J. M. (2024). Natural experiments: Missed opportunities for causal inference in psychology. *Advances in Methods and Practices in Psychological Science, 7*(1), Article 25152459231218610. https://doi.org/10.1177/25152459231218610

Guo, Z., Lai, A., Thygesen, J. H., Farrington, J., Keen, T., & Li, K. (2024). Large language models for mental health applications: Systematic review. *JMIR Mental Health, 11*(1), Article e57400. https://doi.org/10.2196/57400

Hagermoser Sanetti, L. M., & Collier-Meek, M. A. (2019). Increasing implementation science literacy to address the research-to-practice gap in school psychology. *Journal of School Psychology, 76*, 33–47. https://doi.org/10.1016/j.jsp.2019.07.008

Hall, M., Scherner, P. V., Kreidel, Y., & Rubel, J. A. (2021). A systematic review of momentary assessment designs for mood and anxiety symptoms. *Frontiers in Psychology, 12*, Article 642044. https://doi.org/10.3389/fpsyg.2021.642044

Hamaker, E. L., & Wichers, M. (2017). No time like the present: Discovering the hidden dynamics in intensive longitudinal data. *Current Directions in Psychological Science, 26*(1), 10–15. https://doi.org/10.1177/0963721416666518

Hartwigsen, G. (2015). The neurophysiology of language: Insights from non-invasive brain stimulation in the healthy human brain. *Brain and Language, 148*, 81–94. https://doi.org/10.1016/j.bandl.2014.10.007

Haslam, N. (2016). Concept Creep: Psychology's expanding concepts of harm and pathology. *Psychological Inquiry, 27*(1), 1–17. https://doi.org/10.1080/1047840x.2016.1082418

Hayes, S. C., & Hofmann, S. G. (2020). *Beyond the DSM: Toward a process-based alternative for diagnosis and mental health treatment*. New Harbinger Publications.

Hertenstein, E., Trinca, E., Wunderlin, M., Schneider, C. L., Zust, M. A., Feher, K. D., Su, T., Straten, A. V., Berger, T., Baglioni, C., Johann, A., Spiegelhalder, K., Riemann, D., Feige, B., & Nissen, C. (2022). Cognitive behavioral therapy for insomnia in patients with mental disorders and comorbid insomnia: A systematic review and meta-analysis. *Sleep Medicine Reviews, 62*, Article 101597. https://doi.org/10.1016/j.smrv.2022.101597

Herzog, P., Kube, T., & Fassbinder, E. (2022). How childhood maltreatment alters perception and cognition – the predictive processing account of borderline personality disorder. *Psychological Medicine, 52*(14), 2899–2916. https://doi.org/10.1017/S0033291722002458

Ho, E. K., Chen, L., Simic, M., Ashton-James, C. E., Comachio, J., Wang, D. X. M., Hayden, J. A., Ferreira, M. L., & Ferreira, P. H. (2022). Psychological interventions for chronic, non-specific low back pain: Systematic review with network meta-analysis. *British Medical Journal, 376*, Article e067718. https://doi.org/10.1136/bmj-2021-067718

Hoehl, S., Krenn, B., & Vincze, M. (2024). Honest machines? A cross-disciplinary perspective on trustworthy technology for children. *Frontiers in Developmental Psychology, 2*, Article 1308881. https://doi.org/10.3389/fdpys.2024.1308881

Hofmann, S. G., Curtiss, J., & McNally, R. J. (2016). A complex network perspective on clinical science. *Perspectives on Psychological Science, 11*(5), 597–605. https://doi.org/10.1177/1745691616639283

Hoogeveen, S., Sarafoglou, A., Aczel, B., Aditya, Y., Alayan, A. J., Allen, P. J., Altay, S., Alzahawi, S., Amir, Y., & Anthony, F.-V. (2023). A many-analysts approach to the relation between religiosity and well-being. *Religion, Brain & Behavior, 13*(3), 237–283. https://doi.org/10.1080/2153599X.2022.2070255

Hunecke, M., Blobaum, A., Matthies, E., & Hoger, R. (2001). Responsibility and environment – Ecological norm orientation and external factors in the domain of travel mode choice behavior. *Environment and Behavior, 33*(6), 830–852. https://doi.org/10.1177/00139160121973269

Iliescu, D., Greiff, S., Ziegler, M., Nye, C., Geisinger, K., Sellbom, M., Samuel, D., & Saklofske, D. (2024). Proliferation of measures contributes to advancing psychological science. *Communications Psychology, 21*(1), Article 19. https://doi.org/10.1038/s44271-024-00065-w

Insel, T. R. (2014). The NIMH Research Domain Criteria (RDoC) Project: Precision medicine for psychiatry. *American Journal of Psychiatry, 171*(4), 395–397. https://doi.org/10.1176/appi.ajp.2014.14020138

Jachimowicz, J. M. (2022). Embracing field studies as a tool for learning. *Nature Reviews Psychology, 1*(5), 249–250. https://doi.org/10.1038/s44159-022-00047-x

Jacobson, N. C., & Bhattacharya, S. (2022). Digital biomarkers of anxiety disorder symptom changes: Personalized deep learning models using smartphone sensors accurately predict anxiety symptoms from ecological momentary assessments. *Behaviour Research and Therapy, 149*, Article 104013. https://doi.org/10.1016/j.brat.2021.104013

Jannot, A.-S., Agoritsas, T., Gayet-Ageron, A., & Perneger, T. V. (2013). Citation bias favoring statistically significant studies was present in medical research. *Journal of Clinical Epidemiology, 66*(3), 296–301. https://doi.org/10.1016/j.jclinepi.2012.09.015

Jennissen, S., Huber, J., Ehrenthal, J. C., Schauenburg, H., & Dinger, U. (2018). Association between insight and outcome of psychotherapy: Systematic review and meta-analysis. *American Journal of Psychiatry, 175*(10), 961–969. https://doi.org/10.1176/appi.ajp.2018.17080847

Kaiser, T., Brakemeier, E. L., & Herzog, P. (2023). What if we wait? Using synthetic waiting lists to estimate treatment effects in routine outcome data. *Psychotherapy Research, 33*(8), 1043–1057. https://doi.org/10.1080/10503307.2023.2182241

Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., … Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences, 103*, Article 102274. https://doi.org/10.1016/j.lindif.2023.102274

Kelava, A., Kilian, P., Glaesser, J., Merk, S., & Brandt, H. (2022). Forecasting intra-individual changes of affective states taking into account inter-individual differences using intensive longitudinal data from a university student dropout study in math. *Psychometrika, 87*(2), 533–558. https://doi.org/10.1007/s11336-022-09858-6

Kerr, N. L. (1998). HARKing: Hypothesizing after the results are known. *Personality and Social Psychology Review, 2*(3), 196–217. https://doi.org/10.1207/s15327957pspr0203_4

Kindred, R., Bates, G. W., & McBride, N. L. (2022). Long-term outcomes of cognitive behavioural therapy for social anxiety disorder: A meta-analysis of randomised controlled trials. *Journal of Anxiety Disorders, 92*, Article 102640. https://doi.org/10.1016/j.janxdis.2022.102640

Kirchner, L., Kube, T., Berg, M., Eckert, A.-L., Straube, B., Endres, D., & Rief, W. (2024). Social expectations in depression. *Nature Reviews Psychology, 4*(1), 20–34. https://doi.org/10.1038/s44159-024-00386-x

Kleim, B., Wilhelm, F. H., Temp, L., Margraf, J., Wiederhold, B. K., & Rasch, B. (2014). Sleep enhances exposure therapy. *Psychological Medicine, 44*(7), 1511–1519. https://doi.org/10.1017/S0033291713001748

Klein, R. A., Vianello, M., Hasselman, F., Adams, B. G., Adams, R. B., Alper, S., Aveyard, M., Axt, J. R., Babalola, M. T., Bahnik, S., Batra, R., Berkics, M., Bernstein, M. J., Berry, D. R., Bialobrzeska, O., Binan, E. D., Bocian, K., Brandt, M. J., Busching, R., … Nosek, B. A. (2018). Many Labs 2: Investigating variation in replicability across samples and settings. *Advances in Methods and Practices in Psychological Science, 1*(4), 443–490. https://doi.org/10.1177/2515245918810225

Kotov, R., Cicero, D. C., Conway, C. C., DeYoung, C. G., Dombrovski, A., Eaton, N. R., First, M. B., Forbes, M. K., Hyman, S. E., Jonas, K. G., Krueger, R. F., Latzman, R. D., Li, J. J., Nelson, B. D., Regier, D. A., Rodriguez-Seijas, C., Ruggero, C. J., Simms, L. J., Skodol, A. E., … Wright, A. G. C. (2022). The Hierarchical Taxonomy of Psychopathology (HiTOP) in psychiatric practice and research. *Psychological Medicine, 52*(9), 1666–1678. https://doi.org/10.1017/S0033291722001301

Krueger, R. F. (2013). Personality disorders are the vanguard of the post-DSM-5.0 era. *Personality Disorders: Theory, Research, and Treatment, 4*(4), 355–362. https://doi.org/10.1037/per0000028

Kubiak, T., & Smyth, J. M. (2023). Connecting domains – Ecological momentary assessment in a mobile sensing framework. In C. Montag & H. Baumeister (Eds.), *Digital Phenotyping and Mobile Sensing* (pp. 277–283). Springer International Publishing. https://doi.org/10.1007/978-3-030-98546-2_15

Lambert, M. J., Whipple, J. L., & Kleinstauber, M. (2018). Collecting and delivering progress feedback: A meta-analysis of routine outcome monitoring. *Psychotherapy, 55*(4), 520–537. https://doi.org/10.1037/pst0000167

Lawson, K. M., & Robins, R. W. (2021). Sibling constructs: What are they, why do they matter, and how should you handle them?

Personality and Social Psychology Review, 25(4), 344–366. https://doi.org/10.1177/10888683211047101

Lee, S., Kim, H., Park, M. J., & Jeon, H. J. (2021). Current advances in wearable devices and their sensors in patients with depression. *Frontiers in Psychiatry, 12*, Article 672347. https://doi.org/10.3389/fpsyt.2021.672347

Leising, D., Liesefeld, H., Buecker, S., Glöckner, A., & Lortsch, S. (2024). A tentative roadmap for consensus building processes. *Personality Science, 5*, Article 27000710241298610. https://doi.org/10.1177/27000710241298610

Leising, D., Thielmann, I., Glöckner, A., Gärtner, A., & Schönbrodt, F. (2022). Ten steps toward a better personality science – how quality may be rewarded more in research evaluation. *Personality Science, 3*(3). https://doi.org/10.5964/ps.6029

Levy, H. C., O'Bryan, E. M., & Tolin, D. F. (2021). A meta-analysis of relapse rates in cognitive-behavioral therapy for anxiety disorders. *Journal of Anxiety Disorders, 81*, Article 102407. https://doi.org/10.1016/j.janxdis.2021.102407

Lincoln, T., & Rief, W. (2021). (How) can clinical psychology contribute to increasing vaccination rates in Europe? *Clinical Psychology in Europe, 3*(3), 1–6. https://doi.org/10.32872/cpe.7525

Lindquist, M. A., Geuter, S., Wager, T. D., & Caffo, B. S. (2019). Modular preprocessing pipelines can reintroduce artifacts into fMRI data. *Human Brain Mapping, 40*(8), 2358–2376. https://doi.org/10.1002/hbm.24528

Lonsdorf, T. B., Klingelhofer-Jens, M., Andreatta, M., Beckers, T., Chalkia, A., Gerlicher, A., Jentsch, V. L., Meir Drexler, S., Mertens, G., Richter, J., Sjouwerman, R., Wendt, J., & Merz, C. J. (2019). Navigating the garden of forking paths for data exclusions in fear conditioning research. *Elife, 8*, Article e52465. https://doi.org/10.7554/eLife.52465

Lutz, W., Schwartz, B., Deisenhofer, A. K., Schaffrath, J., Eberhardt, S. T., Bommer, J., Vehlen, A., Moggia, D., Poster, K., Weinmann-Lutz, B., Rubel, J. A., & Hehlmann, M. I. (2024). From theory to practice: A transtheoretical treatment and training model (4TM). *Clinical Psychology in Europe, 6*(Spec Issue), 1–12. https://doi.org/10.32872/cpe.12421

Mahalingham, T., McEvoy, P. M., & Clarke, P. J. F. (2023). Assessing the validity of self-report social media use: Evidence of No relationship with objective smartphone use. *Computers in Human Behavior, 140*, Article 107567. https://doi.org/10.1016/j.chb.2022.107567

Mavranezouli, I., Megnin-Viggars, O., Daly, C., Dias, S., Welton, N. J., Stockton, S., Bhutani, G., Grey, N., Leach, J., Greenberg, N., Katona, C., El-Leithy, S., & Pilling, S. (2020). Psychological treatments for post-traumatic stress disorder in adults: A network meta-analysis. *Psychological Medicine, 50*(4), 542–555. https://doi.org/10.1017/S0033291720000070

McHugh, R. K., Whitton, S. W., Peckham, A. D., Welge, J. A., & Otto, M. W. (2013). Patient preference for psychological vs pharmacologic treatment of psychiatric disorders: A meta-analytic review. *Journal of Clinical Psychiatry, 74*(6), 595–602. https://doi.org/10.4088/JCP.12r07757

Mehl, M. R., Eid, M., Wrzus, C., Harari, G. M., Ebner-Priemer, U. W., & Insel, T. R. (2024). *Mobile sensing in psychology: Methods and applications*. Guilford Press.

Meissner, P., Cottler, L. B., Eder, M. M., & Michener, J. L. (2020). Engagement science: The core of dissemination, implementation, and translational research science. *Journal of Clinical and Translational Science, 4*(3), 216–218. https://doi.org/10.1017/cts.2020.8

Merz, C. J., & Wolf, O. T. (2022). How stress hormones shape memories of fear and anxiety in humans. *Neuroscience & Biobehavioral Reviews, 142*, Article 104901. https://doi.org/10.1016/j.neubiorev.2022.104901

Meyer, M. N. (2018). Practical tips for ethical data sharing. *Advances in Methods and Practices in Psychological Science, 1*(1), 131–144. https://doi.org/10.1177/2515245917747656

Miles-Novelo, A., & Anderson, C. A. (2019). Climate change and psychology: Effects of rapid global warming on violence and aggression. *Current Climate Change Reports, 5*(1), 36–46. https://doi.org/10.1007/s40641-019-00121-2

Mokros, A., Hare, R. D., Neumann, C. S., Santtila, P., Habermeyer, E., & Nitschke, J. (2015). Variants of psychopathy in adult male offenders: A latent profile analysis. *Journal of Abnormal Psychology, 124*(2), 372–386. https://doi.org/10.1037/abn0000042

Morey, L. C., Skodol, A. E., & Oldham, J. M. (2014). Clinician judgments of clinical utility: A comparison of DSM-IV-TR personality disorders and the alternative model for DSM-5 personality disorders. *Journal of Abnormal Psychology, 123*(2), 398–405. https://doi.org/10.1037/a0036481

Moris Fernandez, L., & Vadillo, M. A. (2020). Flexibility in reaction time analysis: Many roads to a false positive? *Royal Society Open Science, 7*(2), Article 190831. https://doi.org/10.1098/rsos.190831

National Health Service. (2016). *Psychological therapies, annual report on the use of IAPT services – England, 2015–16*. https://digital.nhs.uk/data-and-information/publications/statistical/psychological-therapies-annual-reports-on-the-use-of-iapt-services/annual-report-2015-16

National Health Service. (2023). *NHS talking therapies manual*. https://www.england.nhs.uk/publication/the-improving-access-to-psychological-therapies-manual/

Nguyen, T., Zimmer, L., & Hoehl, S. (2023). Your turn, my turn. Neural synchrony in mother-infant proto-conversation. *Philosophical Transactions of the Royal Society, 378*(1875), Article 20210488. https://doi.org/10.1098/rstb.2021.0488

Niessen, C., & Lang, J. W. B. (2021). Cognitive control strategies and adaptive performance in a complex work task. *Journal of Applied Psychology, 106*(10), 1586–1599. https://doi.org/10.1037/apl0000830

Niessen, C., Swarowsky, C., & Leiz, M. (2010). Age and adaptation to changes in the workplace. *Journal of Managerial Psychology, 25*(3–4), 356–383. https://doi.org/10.1108/02683941011035287

Nosek, B. A., Hardwicke, T. E., Moshontz, H., Allard, A., Corker, K. S., Dreber, A., Fidler, F., Hilgard, J., Kline Struhl, M., Nuijten, M. B., Rohrer, J. M., Romero, F., Scheel, A. M., Scherer, L. D., Schonbrodt, F. D., & Vazire, S. (2022). Replicability, robustness, and reproducibility in psychological science. *Annual Review of Psychology, 73*, 719–748. https://doi.org/10.1146/annurev-psych-020821-114157

Obels, P., Lakens, D., Coles, N. A., Gottfried, J., & Green, S. A. (2020). Analysis of open data and computational reproducibility in registered reports in psychology. *Advances in Methods and Practices in Psychological Science, 3*(2), 229–237. https://doi.org/10.1177/2515245920918872

Ong, C. W., Hayes, S. C., & Hofmann, S. G. (2022). A process-based approach to cognitive behavioral therapy: A theory-based case illustration. *Frontiers in Psychology, 13*, Article 1002849. https://doi.org/10.3389/fpsyg.2022.1002849

Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science, 349*(6251), Article aac4716. https://doi.org/10.1126/science.aac4716

Orru, G., Monaro, M., Conversano, C., Gemignani, A., & Sartori, G. (2019). Machine learning in psychometrics and psychological research. *Frontiers in Psychology, 10*, Article 2970. https://doi.org/10.3389/fpsyg.2019.02970

Otte, C. (2008). Incomplete remission in depression: Role of psychiatric and somatic comorbidity. *Dialogues in Clinical Neuroscience, 10*(4), 453–460. https://doi.org/10.31887/DCNS.2008.10.4/cotte

Pace-Schott, E. F., Verga, P. W., Bennett, T. S., & Spencer, R. M. (2012). Sleep promotes consolidation and generalization of extinction learning in simulated exposure therapy for spider fear. *Journal of Psychiatric Research, 46*(8), 1036–1044. https://doi.org/10.1016/j.jpsychires.2012.04.015

Patel, V., Saxena, S., Lund, C., Thornicroft, G., Baingana, F., Bolton, P., Chisholm, D., Collins, P. Y., Cooper, J. L., Eaton, J., Herrman, H., Herzallah, M. M., Huang, Y., Jordans, M. J. D., Kleinman, A., Medina-Mora, M. E., Morgan, E., Niaz, U., Omigbodun, O., … UnUtzer, J. (2018). The Lancet Commission on global mental health and sustainable development. *Lancet, 392*(10157), 1553–1598. https://doi.org/10.1016/S0140-6736(18)31612-X

Prinz, F., Schlange, T., & Asadullah, K. (2011). Believe it or not: How much can we rely on published data on potential drug targets? *Nature Reviews Drug Discovery, 10*(9), 712–781. https://doi.org/10.1038/nrd3439-c1

Quintana, D. S. (2020). A synthetic dataset primer for the biobehavioural sciences to promote reproducibility and hypothesis generation. *Elife, 9*, Article e53275. https://doi.org/10.7554/eLife.53275

Rauthmann, J. F. (2023). Personality is (so much) more than just self-reported Big Five traits. *European Journal of Personality, 38*(6), 863–866. https://doi.org/10.1177/08902070231221853

Reddy, L. F., Horan, W. P., Barch, D. M., Buchanan, R. W., Dunayevich, E., Gold, J. M., Lyons, N., Marder, S. R., Treadway, M. T., Wynn, J. K., Young, J. W., & Green, M. F. (2015). Effort-based decision-making paradigms for clinical trials in Schizophrenia: Part 1-psychometric characteristics of 5 paradigms. *Schizophrenia Bulletin, 41*(5), 1045–1054. https://doi.org/10.1093/schbul/sbv089

Renner, K. H., Herbert, C., & Frischlich, L. (2024). *Lehrkonzeption „Forschungsethik in der Psychologie" – Ethische Herausforderungen der Online-Forschung* [Teaching concept "Research ethics in psychology" – Ethical challenges of online research]. Leibniz-Institute for Psychology. https://doi.org/10.23668/psycharchives.15409

Renz, K. E., & Lincoln, T. M. (2022). The effect of salience of rewards on effort-based decision making in psychotic disorders. *BMC Psychiatry, 22*(1), Article 643. https://doi.org/10.1186/s12888-022-04274-7

Ressler, K. J., Berretta, S., Bolshakov, V. Y., Rosso, I. M., Meloni, E. G., Rauch, S. L., & Carlezon, W. A. Jr. (2022). Post-traumatic stress disorder: Clinical and translational neuroscience from cells to circuits. *Nature Reviews Neurology, 18*(5), 273–288. https://doi.org/10.1038/s41582-022-00635-8

Rief, W., Asmundson, G. J. G., Bryant, R. A., Clark, D. M., Ehlers, A., Holmes, E. A., McNally, R. J., Neufeld, C. B., Wilhelm, S., Jaroszewski, A. C., Berg, M., Haberkamp, A., Hofmann, S. G., & PsyChange, C. (2024). The future of psychological treatments: The Marburg Declaration. *Clinical Psychology Review, 110*, Article 102417. https://doi.org/10.1016/j.cpr.2024.102417

Rief, W., Hofmann, S. G., Berg, M., Forbes, M. K., Pizzagalli, D. A., Zimmermann, J., Fried, E. I., & Reed, G. M. (2023). Do we need a novel framework for classifying psychopathology? A discussion paper. *Clinical Psychology in Europe, 5*(4), Article e11699. https://doi.org/10.32872/cpe.11699

Rief, W., Sperl, M. F. J., Braun-Koch, K., Khosrowtaj, Z., Kirchner, L., Schafer, L., Schwarting, R. K. W., Teige-Mocigemba, S., & Panitz, C. (2022). Using expectation violation models to improve the outcome of psychological treatments. *Clinical Psychology Review, 98*, Article 102212. https://www.sciencedirect.com/science/article/pii/S0272735822000976

Robbins, K. A., Touryan, J., Mullen, T., Kothe, C., & Bigdely-Shamlo, N. (2020). How sensitive are EEG results to preprocessing methods: A benchmarking study. *IEEE Transactions on Neural Systems and Rehabilitation Engineering, 28*(5), 1081–1090. https://doi.org/10.1109/Tnsre.2020.2980223

Robinaugh, D. J., Haslbeck, J. M. B., Waldorp, L. J., Kossakowski, J. J., Fried, E. I., Millner, A. J., McNally, R. J., Ryan, O., de Ron, J., van der Maas, H. L. J., van Nes, E. H., Scheffer, M., Kendler, K. S., & Borsboom, D. (2024). Advancing the network theory of mental disorders: A computational model of panic disorder. *Psychological Review, 131*(6), 1482–1508. https://doi.org/10.1037/rev0000515

Rogelberg, S. G., King, E. B., & Alonso, A. (2022). How we can bring I-O psychology science and evidence-based practices to the public. *Industrial and Organizational Psychology, 15*(2), 259–272. https://doi.org/10.1017/iop.2021.142

Ross-Hellauer, T., Tennant, J. P., Banelyte, V., Gorogh, E., Luzi, D., Kraker, P., Pisacane, L., Ruggieri, R., Sifacaki, E., & Vignoli, M. (2020). Ten simple rules for innovative dissemination of research. *PLoS Computational Biology, 16*(4), Article e1007704. https://doi.org/10.1371/journal.pcbi.1007704

Rubio, D. M., Schoenbaum, E. E., Lee, L. S., Schteingart, D. E., Marantz, P. R., Anderson, K. E., Platt, L. D., Baez, A., & Esposito, K. (2010). Defining translational research: Implications for training. *Academic Medicine, 85*(3), 470–475. https://doi.org/10.1097/ACM.0b013e3181ccd618

Rudin, C. (2019). Stop explaining black box machine learning models for high stakes decisions and use interpretable models instead. *Nature Machine Intelligence, 1*(5), 206–215. https://doi.org/10.1038/s42256-019-0048-x

Ruggero, C. J., Kotov, R., Hopwood, C. J., First, M., Clark, L. A., Skodol, A. E., Mullins-Sweatt, S. N., Patrick, C. J., Bach, B., Cicero, D. C., Docherty, A., Simms, L. J., Bagby, R. M., Krueger, R. F., Callahan, J. L., Chmielewski, M., Conway, C. C., De Clercq, B., Dornbach-Bender, A., … Zimmermann, J. (2019). Integrating the Hierarchical Taxonomy of Psychopathology (HiTOP) into clinical practice. *Journal of Consulting and Clinical Psychology, 87*(12), 1069–1084. https://doi.org/10.1037/ccp0000452

Sample, C., Jensen, M. J., Scott, K., McAlaney, J., Fitchpatrick, S., Brockinton, A., Ormrod, D., & Ormrod, A. (2020). Interdisciplinary lessons learned while researching fake news. *Frontiers in Psychology, 11*, Article 2947. https://doi.org/10.3389/fpsyg.2020.537612

Sarsa, S., Denny, P., Hellas, A., & Leinonen, J. (2022, August 7–11). *Automatic generation of programming exercises and code explanations using large language models* [Paper presentation]. Proceedings of the 2022 Conference on International Computing Education Research, Lugano, Switzerland.

Saunders, R., Buckman, J. E. J., & Pilling, S. (2020). Latent variable mixture modelling and individual treatment prediction. *Behaviour Research and Therapy, 124*, Article 103505. https://doi.org/10.1016/j.brat.2019.103505

Scheel, A. M., Schijen, M. R. M. J., & Lakens, D. (2021). An excess of positive results: Comparing the standard psychology literature with registered reports. *Advances in Methods and Practices in Psychological Science, 4*(2), Article 25152459211007467. https://doi.org/10.1177/25152459211007467

Schemer, L., Vlaeyen, J. W. S., Doerr, J. M., Skoluda, N., Nater, U. M., Rief, W., & Glombiewski, J. A. (2018). Treatment processes during exposure and cognitive-behavioral therapy for chronic back pain: A single-case experimental design with multiple baselines. *Behaviour Research and Therapy, 108*, 58–67. https://doi.org/10.1016/j.brat.2018.07.002

Schiefer, J., Stark, L., Gaspard, H., Wille, E., Trautwein, U., & Golle, J. (2021). Scaling up an extracurricular science intervention for elementary school students: It works, and girls benefit more from it than boys. *Journal of Educational Psychology, 113*(4), Article 784. https://doi.org/10.1037/edu0000630

Schneider, B., Becker, N., Krieger, F., Spinath, F. M., & Sparfeldt, J. R. (2020). Teaching the underlying rules of figural matrices in a short video increases test scores. *Intelligence, 82*, Article 101473. https://doi.org/10.1016/j.intell.2020.101473

Schneider, S., Yoon, D., Mokros, A., Schwarz, M. F., Baster, A., & Koehler, D. (2022). The Elemental Psychopathy Assessment (EPA): Factor structure and construct validity across three German samples. *Psychological Assessment, 34*(8), 717–730. https://doi.org/10.1037/pas0001126

Schnyder, U., Ehlers, A., Elbert, T., Foa, E. B., Gersons, B. P., Resick, P. A., Shapiro, F., & Cloitre, M. (2015). Psychotherapies for PTSD: What do they have in common? *European Journal of Psychotraumatology, 6*(1), Article 28186. https://doi.org/10.3402/ejpt.v6.28186

Scholz, R. W., & Stauffacher, M. (2009). Von einer Wissenschaft für die Gesellschaft zu einer Wissenschaft mit der Gesellschaft [From science made for society to science made with society]. *Psychologische Rundschau, 60*(4), 242–244. https://doi.org/10.1026/0033-3042.60.4.242

Schrills, T., & Franke, T. (2023). *How do users experience traceability of AI Systems? Examining subjective information processing awareness in automated insulin delivery (AID) systems*. ACM Transactions on Interactive Intelligent Systems. https://doi.org/10.1145/3588594

Schwartz, B., Szota, K., Schmitz, J., Lueken, U., & Lincoln, T. (2023). Fachgruppe Klinische Psychologie und Psychotherapie: Mehr Differenzierung nach Fachgebieten [Clinical Psychology and Psychotherapy specialist group: Increased differentiation by subject area ifor open science efforts]. *Psychologische Rundschau, 74*(3), 184–185. https://doi.org/10.1026/0033-3042/a000639

Schwartz, R., Smith, G. R., Bello, C., Bialic-Murphy, L., Clark, E., Delavaux, C. S., Fournier de Lauriere, C., van den Hoogen, J., Lauber, T., Ma, H., Maynard, D. S., Mirman, M., Mo, L., Rebindaine, D., Reek, J. E., Werden, L. K., Wu, Z., Yang, G., Zhao, Q., … Crowther, T. W. (2024). Ten simple rules for using large language models in science, version 1.0. *PLoS Computational Biology, 20*(1), Article e1011767. https://doi.org/10.1371/journal.pcbi.1011767

Seeger, C., Frischlich, L., Obermaier, M., Schmid, U. K., & Schulze, H. (2024). *Hate Speech und Angriffe auf Wissenschaftler*innen* [Hate speech and attacks on scientists]. Transferunit Science Communication: Berlin-Brandenburger Akademie der Wissenschaften. https://wissenschaft-im-dialog.de/documents/217/TransferUnit_Forschungsueberblick_Hatespeech.pdf

Siepe, B., & Heck, D. W. (2023). *Multiverse analysis for dynamic network models: Investigating the influence of plausible alternative modeling choices*. osf preprints. https://doi.org/10.31219/osf.io/etm3u

Silberzahn, R., Uhlmann, E. L., Martin, D. P., Anselmi, P., Aust, F., Awtrey, E., Bahník, Š., Bai, F., Bannard, C., & Bonnier, E. (2018). Many analysts, one data set: Making transparent how variations in analytic choices affect results. *Advances in Methods and Practices in Psychological Science, 1*(3), 337–356. https://doi.org/10.1177/2515245917747

Simmonds-Buckley, M., Catarino, A., & Delgadillo, J. (2021). Depression subtypes and their response to cognitive behavioral therapy: A latent transition analysis. *Depression and Anxiety, 38*(9), 907–916. https://doi.org/10.1002/da.23161

Singla, D. R., Kohrt, B. A., Murray, L. K., Anand, A., Chorpita, B. F., & Patel, V. (2017). Psychological treatments for the world: Lessons from low- and middle-income countries. *Annual Review Clinical Psychology, 13*, 149–181. https://doi.org/10.1146/annurev-clinpsy-032816-045217

Smith, R., Badcock, P., & Friston, K. J. (2021). Recent advances in the application of predictive coding and active inference models within clinical neuroscience. *Psychiatry and Clinical Neurosciences, 75*(1), 3–13. https://doi.org/10.1111/pcn.13138

Sparfeldt, J. R., Rost, D. H., Baumeister, U. M., & Christ, O. (2013). Test anxiety in written and oral examinations. *Learning and Individual Differences, 24*, 198–203. https://doi.org/10.1016/j.lindif.2012.12.010

Specht, K. (2019). Current challenges in translational and clinical fMRI and future directions. *Frontiers in Psychiatry, 10*, Article 924. https://doi.org/10.3389/fpsyt.2019.00924

Sprengholz, P. (2018). Welcome to Jupyter: Improving collaboration and reproduction in psychological research by using a notebook system. *The Quantitative Methods for Psychology, 14*(2), 137–146. https://doi.org/10.20982/tqmp.14.2.p137

Stangier, U., Ritter, V., Ivankovic, N., Zaric, J., Haberkamp, A., Rief, W., Berg, M., Herrmann, C., Martin, M. A., & Michael, K. (2024). How can psychology improve psychotherapy? Development perspectives of translational psychotherapy research. *Psychologische Rundschau, 76*(2), 122–132. https://doi.org/10.1026/0033-3042/a000662

Stanislaus, S., Vinberg, M., Melbye, S., Frost, M., Busk, J., Bardram, J. E., Kessing, L. V., & Faurholt-Jepsen, M. (2020). Smartphone-based activity measurements in patients with newly diagnosed bipolar disorder, unaffected relatives and control individuals. *International Journal of Bipolar Disorders, 8*(1), Article 32. https://doi.org/10.1186/s40345-020-00195-0

Steegen, S., Tuerlinckx, F., Gelman, A., & Vanpaemel, W. (2016). Increasing transparency through a multiverse analysis. *Perspectives on Psychological Science, 11*(5), 702–712. https://doi.org/10.1177/1745691616658637

Stefan, A. M., & Schönbrodt, F. D. (2023). Big little lies: A compendium and simulation of p-hacking strategies. *Royal Society Open Science, 10*(2), Article 220346. https://doi.org/10.1098/rsos.220346

Stenfors, T., Kajamaa, A., & Bennett, D. (2020). How to … assess the quality of qualitative research. *Clinical Teacher, 17*(6), 596–599. https://doi.org/10.1111/tct.13242

Stieger, M., Fluckiger, C., Ruegger, D., Kowatsch, T., Roberts, B. W., & Allemand, M. (2021). Changing personality traits with the help of a digital personality change intervention. *Proceedings of the National Academy of Sciences USA, 118*(8), Article e2017548118. https://doi.org/10.1073/pnas.2017548118

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

Suzuki, T., Samuel, D. B., Pahlen, S., & Krueger, R. F. (2015). DSM-5 alternative personality disorder model traits as maladaptive extreme variants of the five-factor model: An item-response theory analysis. *Journal of Abnormal Psychology, 124*(2), 343–354. https://doi.org/10.1037/abn0000035

Swim, J., Clayton, S., Doherty, T., Gifford, R., Howard, G., Reser, J., Stern, P., & Weber, E. (2009). *Psychology and global climate change: Addressing a multi-faceted phenomenon and set of challenges. A report by the American Psychological Association's task force on the interface between psychology and global climate change*. APA. https://www.apa.org/science/about/publications/climate-change.pdf

Syed, M. (2024). Three persistent myths about open science. *Journal of Trial & Error, 4*(2). https://doi.org/10.36850/mr11

Szota, K., Thielemann, J. F. B., Christiansen, H., Rye, M., Aarons, G. A., & Barke, A. (2021). Cross-cultural adaption and psychometric investigation of the German version of the Evidence Based Practice Attitude Scale (EBPAS-36D). *Health Research Policy and Systems Volume, 19*(1), Article 90. https://doi.org/10.1186/s12961-021-00736-8

Szucs, D., & Ioannidis, J. P. (2017). Empirical assessment of published effect sizes and power in the recent cognitive neuroscience and psychology literature. *PLoS Biology, 15*(3), Article e2000797. https://doi.org/10.1371/journal.pbio.2000797

Taloni, A., Scorcia, V., & Giannaccare, G. (2023). Large language model advanced data analysis abuse to create a fake data set in medical research. *JAMA Ophthalmology, 141*(12), 1174–1175. https://doi.org/10.1001/jamaophthalmol.2023.5162

Taubner, S., & Sharp, C. (2024). Mental flexibility and epistemic trust through implicit social learning – A meta-model of change processes in psychotherapy with personality disorders. *Clinical Psychology in Europe, 6*(Spec Issue), 1–16. https://doi.org/10.32872/cpe.12433

Taylor, S. (2020). Anxiety disorders, climate change, and the challenges ahead: Introduction to the special issue. *Journal of Anxiety Disorders, 76*, Article 102313. https://doi.org/10.1016/j.janxdis.2020.102313

Thew, G. R., Popa, A., Allsop, C., Crozier, E., Landsberg, J., & Sadler, S. (2024). The addition of employment support alongside psychological therapy enhances the chance of recovery for clients most at risk of poor clinical outcomes. *Behavioural and Cognitive Psychotherapy, 52*(1), 93–99.

Timans, R., Wouters, P., & Heilbron, J. (2019). Mixed methods research: What it is and what it could be. *Theory and Society, 48*(2), 193–216. https://doi.org/10.1007/s11186-019-09345-5

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal Qualitative Health Care, 19*(6), 349–357. https://doi.org/10.1093/intqhc/mzm042

Trint Limited. (2023). *Trint*. https://trint.com/

Walz, N., Muhlberger, A., & Pauli, P. (2016). A human open field test reveals thigmotaxis related to agoraphobic fear. *Biological Psychiatry, 80*(5), 390–397. https://doi.org/10.1016/j.biopsych.2015.12.016

Warikoo, N., Mayer, T., Atzil-Slonim, D., Eliassaf, A., Haimovitz, S., & Gurevych, I. (2022). NLP meets psychotherapy: Using predicted client emotions and self-reported client emotions to measure emotional coherence. *arXiv preprint*. https://doi.org/10.48550/arXiv.2211.12512

Weermeijer, J., Lafit, G., Kiekens, G., Wampers, M., Eisele, G., Kasanova, Z., Vaessen, T., Kuppens, P., & Myin-Germeys, I. (2022). Applying multiverse analysis to experience sampling data: Investigating whether preprocessing choices affect robustness of conclusions. *Behavior Research Methods, 54*(6), 2981–2992. https://doi.org/10.3758/s13428-021-01777-1

Wendt, J., Scheller, D. A., Banik, A., Luszczynska, A., Forberger, S., Zeeb, H., Scheidmeir, M., Kubiak, T., Lien, N., Meshkovska, B., Lobczowska, K., Romaniuk, P., Neumann-Podczaska, A., Wieczorowska-Tobis, K., Steinacker, J. M., & Mueller-Stierlin, A. S. (2023). Good practice recommendations on implementation evaluation for policies targeting diet, physical activity, and sedentary behaviour. *BMC Public Health, 23*(1), Article 1259. https://doi.org/10.1186/s12889-023-15775-9

Westermann, S., & Banisch, S. (2024). A formal model of affiliative interpersonality. *Clinical Psychological Science, 13*(1), 43–68. https://doi.org/10.1177/21677026241229663

Wicherts, J. M., Veldkamp, C. L., Augusteijn, H. E., Bakker, M., Van Aert, R., & Van Assen, M. A. (2016). Degrees of freedom in planning, running, analyzing, and reporting psychological studies: A checklist to avoid p-hacking. *Frontiers in Psychology*, cArticle 1832. https://doi.org/10.3389/fpsyg.2016.01832

Wilkinson, M. D., Dumontier, M., Aalbersberg, I. J., Appleton, G., Axton, M., Baak, A., Blomberg, N., Boiten, J. W., da Silva Santos, L. B., Bourne, P. E., Bouwman, J., Brookes, A. J., Clark, T., Crosas, M., Dillo, I., Dumon, O., Edmunds, S., Evelo, C. T., Finkers, R., … Mons, B. (2016). The FAIR guiding principles for scientific data management and stewardship. *Science Data, 3*(1), Article 160018. https://doi.org/10.1038/sdata.2016.18

Wright, A. G. C., & Hopwood, C. J. (2022). Integrating and distinguishing personality and psychopathology. *Journal of Personality, 90*(1), 5–19. https://doi.org/10.1111/jopy.12671

Yadav, D. (2021). Criteria for good qualitative research: A comprehensive review. *The Asia-Pacific Education Researcher, 31*(6), 679–689. https://doi.org/10.1007/s40299-021-00619-0

Yarkoni, T., & Westfall, J. (2017). Choosing prediction over explanation in psychology: Lessons from machine learning. *Perspectives on Psychological Science, 12*(6), 1100–1122. https://doi.org/10.1177/1745691617693393

Yuan, N., Chen, Y., Xia, Y., Dai, J., & Liu, C. (2019). Inflammation-related biomarkers in major psychiatric disorders: A cross-disorder assessment of reproducibility and specificity in 43 meta-analyses. *Translational Psychiatry, 9*(1), Article 233. https://doi.org/10.1038/s41398-019-0570-y

Zagaria, A., Ando, A., & Zennaro, A. (2020). Psychology: A giant with feet of clay. *Integrative Psychological and Behavioral Science, 54*(3), 521–562. https://doi.org/10.1007/s12124-020-09524-5

Zimmermann, J., Kerber, A., Rek, K., Hopwood, C. J., & Krueger, R. F. (2019). A brief but comprehensive review of research on the alternative DSM-5 model for personality disorders. *Current Psychiatry Reports, 21*(9), Article 92. https://doi.org/10.1007/s11920-019-1079-z

Zou, J., & Schiebinger, L. (2018). AI can be sexist and racist – It's time to make it fair. *Nature, 559*(7714), 324–326. https://doi.org/10.1038/d41586-018-05707-8

History
Received June 1, 2024
Revision received March 28, 2025
Accepted April 11, 2025
Published online July 11, 2025

Acknowledgments
The Members of the PsyChange Network in alphabetical order: Max Berg*, Hanna Christiansen*, Anke Haberkamp*, Christiane Hermann**, Stefan G. Hofmann*, Christiane A. Melzig*, Winfried Rief*, Viktoria Ritter***, Julian Rubel****, Christina Schwenck***, Ulrich Stangier***, Rudolf Stark**, Regina Steil***.
*Dept. of Psychology, Philipps-University of Marburg
**Dept. of Psychology, Justus-Liebig University of Gießen
***Dept. of Psychology, Goethe-University Frankfurt
****School of Human Sciences, Dept. of Psychology, Osnabrück University

Conflict of Interest
M. Berg's post-doc position is funded by the DYNAMIC center, funded by the HMWK.
W. Rief has received honoraria from Boehringer Ingelheim for talks on post-COVID, and he receives royalties from book sales. He is a principal investigator in various projects funded by the German Research Foundation DFG and principal investigator of multicenter projects funded by the HMWK (PsyChange and DYNAMIC).
T. M. Lincoln receives royalties from book sales and clinical workshops. She is a principal Investigator in various projects funded by the DFG. No funding from any of these entities was used to support the current work, and all views expressed are solely those of the author.
A. Mokros is the first author of the German version of the Hare Psychopathy Checklist – Revised (PCL-R) and receives royalties from its sale.

J. Zimmermann received honoraria from the Society for Personality Assessment for editorial work. No funding from this entity was used to support the current work, and all views expressed are solely those of the author.
H. Brandt, J. Degner, T. Franke, L. Frischlich, M. Gade, A. Haberkamp, G. Hartwigsen, S. Höhl, T. Kubiak, E. Matthies, C. J. Merz, C. Niessen, J. Rauthmann, J. Sparfeldt, K. Suchotzki, and K. Szota declare no conflict of interest, neither financial nor otherwise.
Use of Large Language Models for scientific writing: The utilization of large language models was exclusively for the purpose of linguistic editing. They were not employed for literature research or content creation. All proposals made by the models have been comprehensively reviewed and edited by the authors. The authors take full responsibility for the scientific accuracy and integrity of the text.

Authorship
M. Berg (MB), W. Rief (WR), A. Haberkamp (AH), Conceptualization, Writing – original draft. C.J. Merz (CM), G. Hartwigsen (GH), K. Szota (KSz), T. M. Lincoln (TL), S. Hoehl (SH), J. Rauthmann (JR), J. Zimmermann (JZ), J. R. Sparfeldt (JS), T. Franke (TF), E. Matthies (EM), M. Gade (MG), T. Kubiak (TK), A. Mokros (AM), K. Suchotzki (Ksu), L. Frischlich (LF), H. Brandt (HB), J. Degner (JD), C. Niessen (CN), Writing, review & editing.
All authors and PsyChange Network members approved the revised version of this manuscript.

Funding
This work was supported by the PSYCHANGE project (funding number: 56040018), an initiative sponsored by a grant from the Hessian Ministry of Science and Art (HMWK) and by the DYNAMIC center, funded by the LOEWE program of the HMWK (grant number: LOEWE1/16/519/03/09.001(0009)/98).
Open access publication enabled by University of Marburg, Germany.

ORCID
Max Berg
https://orcid.org/0000-0003-3060-7869
Kristina Suchotzki
https://orcid.org/0009-0003-1034-9687
Johannes Zimmermann
https://orcid.org/0000-0001-6975-2356
Christian J. Merz
https://orcid.org/0000-0001-5679-6595
Katharina Szota
https://orcid.org/0000-0001-9042-8729
Holger Brandt
https://orcid.org/0000-0001-5906-5202
Gesa Hartwigsen
https://orcid.org/0000-0002-8084-1330
Tania M. Lincoln
https://orcid.org/0000-0002-6674-2440
Andreas Mokros
https://orcid.org/0000-0002-9706-0928
Miriam Gade
https://orcid.org/0000-0002-1537-0157
Cornelia Niessen
https://orcid.org/0000-0003-1994-3677
John Rauthmann
https://orcid.org/0000-0001-6115-3092
Stefanie Hoehl
https://orcid.org/0000-0003-0472-0374
Thomas Kubiak
https://orcid.org/0000-0003-0095-9265
Thomas Franke
https://orcid.org/0000-0002-7211-3771
Lena Frischlich
https://orcid.org/0000-0001-5039-5301
Juliane Degner
https://orcid.org/0000-0002-6634-8099
Jörn R. Sparfeldt
https://orcid.org/0000-0002-7715-0651
Winfried Rief
https://orcid.org/0000-0002-7019-2250
Anke Haberkamp
https://orcid.org/0000-0002-1774-1660

Max Berg
University of Marburg
Department of Psychology
Gutenbergstraße 18
35032 Marburg
Germany
bergmax@staff.uni-marburg.de

Max Berg is a postdoctoral fellow in clinical psychology at the University of Marburg. His clinical research interests include repetitive negative thinking, anhedonia/amotivation, and psychopharmacology. His methodological interests include network analysis and predictive processing.

Kristina Suchotzki is Professor of Psychological Assessment and Legal Psychology at the University of Marburg. Her research interests include the psychological bases of lying as well as detecting lies using behavioral and biological measures. She is also interested in the emotional modulation of memory for crime-related details.

Johannes Zimmermann is Professor of Personality Psychology at the University of Kassel. He conducts research at the interface of personality psychology and clinical psychology, especially in the area of (maladaptive) personality traits and disorders.

Christian Merz is Professor of Cognitive Psychology at Ruhr University Bochum. His research interests focus on the influence of stress and sex hormones on (emotional) learning and memory processes as well as their clinical applications.

Katharina Szota is a postdoctoral fellow in the Department of Clinical Child and Adolescent Psychology at the University of Marburg. Her research focuses on the dissemination and implementation of evidence-based therapy.

Holger Brandt is Professor of Psychometrics at the University of Tübingen. His research focuses on dynamic models for intensive longitudinal data, machine learning, and Bayesian approaches to statistics.

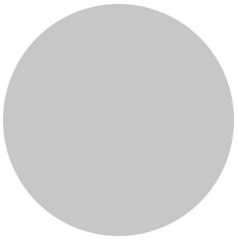
Gesa Hartwigsen is Professor of Cognitive and Biological Psychology at the University of Leipzig and at the Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig. Her research focuses on neural networks for higher cognitive functions and language reorganization after stroke.

Tania Lincoln is Professor of Clinical Psychology at the University of Hamburg. Tania's research focuses on cognitive-behavioral interventions for psychosis and on elucidating the biological, psychological, and social factors that contribute to psychotic symptomatology.

Andreas Mokros is Professor of Personality, Legal Psychology, and Assessment at the University of Hagen, currently serving as Dean of the Faculty of Psychology. His research focuses on the etiology and assessment of personality disorders, particularly antisocial personality disorder and psychopathy.

Miriam Gade is Professor of Cognitive Psychology at the Medical School Berlin. Her research interests include action control and multitasking. She also studies the cognitive changes associated with multilingualism.

Cornelia Niessen is a Professor of Work and Organizational Psychology at the University of Erlangen-Nuremberg. Her research focuses on performance and health in the context of work change, self-management, and human-AI interaction.



John Rauthmann is Professor of Personality and Educational Psychology at the Ludwig-Maximilians-Universität in Munich. His research interests include dynamic approaches to personality, multimodal approaches to personality assessment, and the interplay between personality and the environment.

Stefanie Hoehl is Professor of Developmental Psychology at the University of Vienna. Her research focuses on neural and behavioral synchrony in social interaction, social learning, and the development of face and emotion recognition.

Thomas Kubiak is Professor of Health Psychology at the University of Mainz. His research focuses on emotion and self-regulation in the context of health and illness and real-time data capture methodologies.

Thomas Franke is a Professor of Engineering Psychology at the University of Lübeck. His research interests include sustainability and resource regulation in energy, mobility, health, and automation. He focuses on aspects of action regulation, user experience, human-AI integration, and interface design.

Lena Frischlich is a Media Psychologist and Associate Professor at the Digital Democracy Centre at the University of Southern Denmark. Her research focuses on misinformation, propaganda and other deviant communication, especially in online contexts.

Juliane Degner is Professor of Social Psychology at the University of Hamburg. Her research is primarily concerned with automatic processes of social perception and impression formation and the influence of social categorization processes, stereotypes and prejudices.

Ellen Matthies is Professor of Environmental Psychology at the University of Magdeburg. Her research interests include human-environment interaction, with a strong focus on environmentally relevant behaviors and decisions (energy use, car use), and the theory-based development and evaluation of interventions to promote sustainable consumption.

Jörn Sparfeldt is Professor of Educational Sciences at Saarland University. His research focuses mainly on intelligence and giftedness, motivation in the educational field as well as on psychological and educational assessment.

Winfried Rief is Professor of Clinical Psychology at the University of Marburg. His research topics include placebo/nocebo effects, adaptive and maladaptive expectations and somatoform disorders.

Anke Haberkamp is Professor of Experimental Psychopathology at the University of Witten/Herdecke. Her research interests include experimental studies on the causes and maintenance of mental disorders, especially anxiety disorders. Furthermore, she is interested in translational psychotherapy research.