



www.ehps.net/ehp **The European
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Editorial

Pamela Rackow The EHPS is a society that is shaped by its members.
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Angela Rodrigues An example of this are the special interest groups (SIGs) organised
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by EHPS members and the various opportunities created for members to meet and learn from each other via Create and Synergy expert meetings. This current EHP issue is therefore devoted to showcase exactly this by highlighting the Open Science SIG and the Habit SIG as well as providing a reflection piece on last year's Synergy meeting about habits.

Emma Norris and Elaine Toomey are SIG Co-Chairs and introduce, on behalf of the SIG Committee, the Open Science in Health Psychology SIG. The authors report why open science in health psychology and in the current climate is so important. They describe how this SIG works and review this year's roundtable discussion. This SIGs future plans sound very exciting and it is therefore worth following them on twitter to stay up to date.

Benjamin Gardner, Phillippa Lally and Sarah Labudek introduce the new EHPS Habit SIG. Their article provides an excellent overview on habits research and their role in health psychology. This SIG has been officially launched in an online event during the EHPS Online Scientific Meeting in August 2020 and discussed challenges arising from the coronavirus pandemic for the development and application of habit theory. This piece also covers the aims of the Habit SIG and invites interested EHPS members to get in touch and to join this special interest group.

This EHP issue also features a complement reflection piece on the 2019 SYNERGY expert

meeting 2019 which was habit theory and application. In his reflection piece Dan Brown provides an overview about the Synergy expert meeting from last year's EHPS conference 2019 in Dubrovnik (Croatia): "Learning from the past: Establishing an agenda for habit research in health" facilitated by Benjamin Gardner and Phillippa Lally. The expert group has identified the lack of a unified theory in habit research as well as the lack of qualitative research as some of the main issues in the field. Dan acknowledges the opportunities for meeting experts in the field, being able to put a face to name and the constructive atmosphere and discussions during the expert meeting as extremely helpful for his work and this has motivated him to also participating in future events.

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Open Science in Health Psychology: Launching the EHPS Open Science SIG

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What is Open Science?

Open Science is a growing global movement aiming to make all aspects of research, education and scholarship accessible, transparent, and available to all audiences as early as possible. Open Science involves interdisciplinary scientists, funding bodies and universities working collaboratively to increase reproducibility and transparency in the scientific process, reporting and teaching (Norris & O'Connor, 2019; O'Connor, 2020; Zecevic et al., 2020). Open Science includes:

- pre-registration of research methods and analyses (using repositories such as AsPredicted)
- making data¹, materials and analysis scripts openly available (using repositories such as the Open Science Framework and understandable code such as using RMarkdown)
- making the full paper available via pre-prints prior to journal publication (such as on PsyArXiv) and subsequent Open Access publishing.

You can find a great introductory guide to Open Science and how to incorporate it into your research in Kathawalla et al.'s recent preprint (Kathawalla et al., 2020).

¹ Or "As open as possible, as closed as necessary" to protect participants where the data cannot be fully and irreversibly anonymised (British Psychological Society, 2020).

Why is Open Science important for health psychology?

Health psychology has much to gain from incorporating Open Science principles and methods (Hagger et al., 2017; Peters et al., 2017). For example, opening access of effective intervention materials to wider audiences maximises the potential for wider intervention adoption, whilst also allowing greater use of materials: often produced after much thorough development work. The recent COVID-19 pandemic has also highlighted the benefits of Open Science, where health psychology and human behaviour changes are at the heart of disease management in lieu of an effective vaccine or treatment. Pre-prints have enabled important research to be urgently published in preprint servers, whilst being concurrently peer reviewed in traditional journals. This has facilitated an accelerated uptake of research findings, whilst allowing open scrutiny of data and results (Homolak et al., 2020).

The European Health Psychology Society (EHPS) Open Science Special Interest Group (SIG) was established in late December 2019, and in collaboration with the EHPS and other international organisations, we aim to:

- Bring together health psychologists interested in Open Science behaviours
- Share best practices/innovations in Open Science to health psychologists
- Provide guidance and/or training on Open Science
- Promote the role of health psychology for improving Open Science across disciplines
- Liaise with organisations which promote Open

Science

- Encourage and reward replication and reproducibility within health psychology

Progress so far

Since the SIG was accepted in December 2019, we have been busy establishing our network, priorities and future initiatives. Despite some interference with planned activities during the COVID-19 pandemic, the SIG has been extremely active with ongoing plans for future development.

Roundtable at EHPS 2020 online conference

We ran a successful launch event at EHPS' online conference in August 2020: a roundtable entitled 'What is Open Science and how can it improve the quality of health psychology research?'. Over 50 live attendees heard from some fantastic speakers including Professor Daryl O'Connor (University of Leeds, UK) presenting on international strategies to increase Open Science, Dr Talea Cornelius (Columbia University, USA) who presented on The Science of Behaviour Change measures repository (Sumner et al., 2019) designed to open accessibility of psychological measures, Dr Gjal-Jorn Peters (Open University of the Netherlands) who presented on linking resources and promoting 'interoperability' in Open Science resources, and Professors Susan Michie and Robert West (University College London, UK) who discussed how we can update and sustain Open Science tools in the long-term. This was followed by a lively Q&A session. You can find slides from the roundtable event here. A recording of the session will be made available shortly via the conference organising team (will be made available on Open Science Framework when released).

A range of initiatives to widen understanding and access to health psychology research was presented. These included Acyclic Behavior Change Diagrams by Dr Gjal-Jorn Peters and an ontology-based modelling system for representing behaviour change theories (Hale et al., 2020). However, one key discussion point involved how best to sustain Open Science initiatives beyond their initial funding and development. Professor Susan Michie suggested international professional bodies such as EHPS could collaborate with other groups to pool resources and funding, providing a managed long-term solution. Discussions with EHPS are set to continue on this.

Discussion also continued after the event on Twitter. Dr Laura König (University of Bayreuth, Germany) asked for recommendations and experiences of writing Registered Reports for PhD students and early career researchers. In brief, Registered Reports in participating journals split conventional peer review in half to reduce risk of publication bias, i.e. publishing positive/statistically significant findings more than negative/non-significant findings. The overview background literature, hypotheses, methods and analysis plan are first reviewed prior to study commencement, with the study either given 'in-principle acceptance', revisions or rejection based on these essential details alone (Stage 1 review). Upon acceptance, the study is then pre-registered (such as on Open Science Framework), before full appraisal of the entire study, paper and data upon completion (Stage 2 review; Chambers, 2019). This Twitter discussion included tips on how to schedule Registered Reports (RR) within strict PhD timelines and advice on managing the altered associated publication timelines from RR champion Prof Chris Chambers (Cardiff University, UK): Full thread available here.

Future plans

We're just getting started! We have recently been awarded EHPS SIG grant funding to run a research prioritisation exercise to identify key priorities of Open Science research as applied to health psychology. We are currently drafting the protocol and pre-registration for this research. We will be consulting EHPS members as part of this work, so stay tuned for more information! We are also in discussions to run online Open Science introduction sessions over the next year. Meanwhile, it will be interesting to see which health psychology journals show leadership by taking up the registered report article format, and how our community responds to these initiatives! Get in touch and stay tuned on Twitter: @EHPS_OS_SIG, with an EHPS website and mailing list coming very soon!

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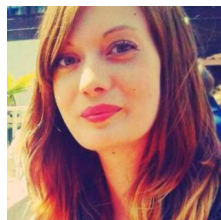
On behalf of the SIG Committee: Alex Dima, Chris Noone, Gjalt-Jorn Peters, James Green, James Reynolds, Jo Brooks, Keegan Knittle, Matti Heino, Neza Javornik & Sean Grant. Also thanks to our Advisory Group: Daryl O'Connor, Martin Hagger, Nelli Hankonen & Susan Michie.

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Introducing the Habit Theory and Application Special Interest Group

Dr Benjamin Gardner Many health-relevant behaviours are done

King's College London, UK repeatedly and

Dr Phillipa Lally automatically. Putting on a seatbelt, brushing our

University College London, UK teeth, washing our

Sarah Labudek hands; all are performed

Heidelberg University, Germany largely on 'autopilot'. Reasoned action models, such as the Theory of

Planned Behaviour (Ajzen, 1991), which portray behaviour as the output of a thoughtful deliberation process, are inadequate for explaining such automatic actions. Many of these actions arise not through reasoned intentions, but via habit.

Habit can be thought of as a cognitive process whereby encountering a context automatically triggers an impulse to enact a behaviour, due to the activation of context-behaviour associations learned through context-consistent repetition (Gardner, 2015). Unless sufficiently opposed by stronger competing impulses, the habit-generated impulse effortlessly translates into action, potentially outside of awareness, volitional control and without – or even in spite of – intention. Habitual behaviour describes action generated by this process (Gardner, 2015). For example, settling into a car seat automatically prompts the strapping of the seatbelt; stumbling bleary-eyed into the bathroom after waking may trigger toothbrushing; and using a toilet prompts us to wash our hands.

Habit develops as an action is repeated in a stable context, which reinforces context-behaviour associations (Lally, van Jaarsveld, Potts & Wardle, 2010). Over time, the association acquires

dominance in memory, such that the learned act becomes the most mentally accessible of all available responses in the associated context (Danner, Aarts & de Vries, 2008), and regulation over action is transferred from conscious deliberative processes to environmental cues. Forming habits is highly adaptive, as it 'locks in' our everyday actions, allowing us to enact them effectively and efficiently while devoting our finite cognitive resources to more cognitively demanding concurrent tasks (Wood, Quinn & Kashy, 2002). Having habits to fall back on allows us to efficiently and effectively perform everyday tasks even when, in the chaos of daily life, we momentarily lack attention, willpower, or motivation (Neal, Wood & Drolet, 2013; Lin, Wood, & Monterosso, 2016). The downside to habits is that, when we find they no longer serve our needs, their automatic, cue-dependent nature renders them difficult to break (Verplanken & Wood, 2006).

Although the formal study of habit has a long history (see James, 1891), advances continue to be made in understanding habit and its application to real-world actions, and many such developments are being made within health psychology (see Verplanken, 2018). Gardner's (2015) review of the role of habit in health behaviour offered a novel definition of habit as a process, rather than as a form of behaviour (see too Fleetwood, in press), which resolved a logical tension inherent in theories that propose that habit determines behaviour (Triandis, 1977); as Maddux (1997) observed, 'habit cannot be both the behavior and the cause of that behavior' (p336). This definition also emphasises the distinction between 'habit' and

'habitual behaviour', which raises the possibility that interventions that appear to break unhealthy habits may disrupt only the translation of habit into behaviour, rather than breaking the underlying cue-response association (Gardner, Rebar & Lally, 2020). Phillips and Gardner (2016) proposed a distinction between two manifestations of the habit process in any one action, showing that people may habitually 'decide' to engage in exercise (i.e. habitual instigation) or may habitually 'do' the exercise (i.e. habitual execution). This distinction appears useful not only for specifying the precise contribution of habit to an action (Hoo, Boote, Wildman, Campbell & Gardner, 2017), but also for understanding and changing behaviours for which health outcomes arise from both the frequency and quality of performance, such as handwashing or toothbrushing (Raison, Corcoran, Burnside & Harris, 2020). Mullan and Novoradovskaya (2018) have sought to reconcile the concept of habit – which has traditionally been investigated in studies of animals performing simple actions such as pressing levers (Adams, 1982; Tolman, 1932) – with the complexity of real-world human health behaviours. They argue that complexity can be distilled into two components: the number of steps involved in enacting an action, and the immediacy with which rewards are delivered. Their review suggested that habit may be a stronger determinant of 'one-step' behaviours that deliver immediate hedonic rewards than of, multi-step, behaviours with more distal benefits, which tend to be driven more by intentions.

Health psychology has also led the way in using habit to promote behaviour change. Lally et al's (2010) seminal study documented the process of real-world habit formation, based on studying the development of automaticity with once-daily repetitions of newly-adopted physical activity or dietary behaviours among 96 participants. Results indicated that habit forms asymptotically, with the rapid gains observed with early repetitions

decelerating until a plateau is reached (see too Fournier et al, 2017). Post-hoc exploration also highlighted a tendency, albeit not statistically significant, for habit to develop more quickly for simpler actions, such as drinking water, relative to complex acts like doing 50 sit-ups. Insights from Lally's study have fed into development of interventions that explicitly position habit formation as an outcome goal, often pairing habit formation with a 'small changes' approach that promotes habitual uptake of simple actions (Fleig et al, 2016; Lally, Chipperfield & Wardle, 2008). Recent work has expanded the scope of habit-based interventions by targeting habitual performance of preparatory actions (e.g., habitually packing a gym bag, to promote exercise; Kaushal, Rhodes, Spence & Meldrum, 2017) – and promoting the formation of habitually triggered 'higher-order' responses that permit greater behavioural flexibility than is usually assumed in traditional habit formation interventions (e.g., filling half of a plate with vegetables; Phillips, Johnson & More, 2019).

The EHPS Habit Theory and Application Special Interest Group (SIG) was formed in 2020 to capitalise and build on momentum in habit research in health psychology. The SIG arose following a two-day pre-conference SYNERGY workshop that we delivered at the 2019 EHPS conference in Dubrovnik. The workshop showcased the developments made in habit theory and application in recent years, and activities focused on agreeing an agenda for habit research in health. (A manuscript reporting this agenda is in preparation.) The workshop brought together researchers from a range of behavioural and theoretical domains, and highlighted both the levels of interest in habit theory within European health psychology and the lack of a structure to unify, formalise and develop the various strands of habit-relevant interests present in the group.

The planned inaugural event for the Habit SIG was to be a discussion meeting run in concert with a one-day seminar at Utrecht University in May

2020, designed to understand habits in their societal context. The seminar was however cancelled due to the coronavirus pandemic. The pandemic, however, strengthened our resolve to develop the SIG and provide a forum for sharing and building on our understanding of the role of habits in understanding and changing health behaviours, because habit change is central to tackling coronavirus. The practical steps that are recommended as a means to limit transmission of coronavirus ultimately involve forming new, hygienic habits (e.g., washing hands frequently and rigorously; wearing face masks) or breaking old unhygienic habits (e.g., making physical contact with others; face-touching; West, Michie, Amlot & Rubin, 2020). Recognising the automaticity of such actions is a vital step in developing effective interventions to encourage hygienic practices and disrupt transmission of coronavirus (West et al., 2020). The imposition of movement restrictions when nations moved into partial or full lockdown entailed a discontinuation of exposure to everyday contexts such as the workplace, and confinement to the home. Such context disruption may at least partly explain decreased engagement in health behaviours habitually performed outside of the home, such as physical activity (Smith et al., 2020). Conversely, anecdotal evidence suggests that many people took up new health behaviours in the home, such as online exercise workouts (see Hammami, Harrabi, Mohr & Krustup, 2020). The much-anticipated 'return to normality' after the pandemic recedes may therefore reactivate dormant unhealthy habits associated with contexts such as the workplace, while discontinuing any newly formed home-based habits, both of which will likely prompt relapse into old, unhealthy patterns. By capturing expertise and interest in habit within the EHPS, the Habit SIG should be well positioned to respond to the coronavirus pandemic and future urgent public health issues.

We officially launched the Habit SIG with a discussion meeting at the EHPS Online Scientific

Meeting in August 2020 about the opportunities and challenges arising from the coronavirus pandemic for the development and application of habit theory ('Habit in the age of Covid: opportunities and obstacles'). Topics covered included: ongoing research projects, including longitudinal surveys tracking the habitual nature of hygiene behaviours and their determinants over the course of the pandemic; developing ideas for new habit-based research projects to help stem the coronavirus and future pandemics, such as the need for initiatives to understand and reduce face-touching, an archetypal automatic behaviour; and how best to disseminate insights from habit theory into practice.

The stated aims of the Habit SIG are to:

- Connect health psychology researchers interested in habitual behaviour and surrounding issues (definition, measurement, theory, application)
- Provide a forum for exchange and debate of new ideas and questions, as well as advertising relevant publications, events and endeavours that others might be interested in
- Be a source of support for other researchers less involved in the habit area to ask questions and receive expert responses

Future events will likely include workshops, training programmes, symposia, roundtables and invited talks. We are currently planning our second event, a webinar that will take place in Spring 2021.

William James (1899) once wrote that "ninety-nine hundredths or, possibly, nine hundred and ninety-nine thousandths of our activity is purely automatic and habitual". Even those actions that we select via a deliberative decision-making process are typically executed via habit-driven processes (Cooper & Shallice, 2000; Gardner, 2015; Phillips & Gardner, 2016). All psychologists interested in understanding or changing behaviour, particularly where that behaviour involves or requires repeated performance, are thus by extension interested in

habit. We invite everyone in the health psychology community with an interest in understanding habit, habitual behaviour, or behaviour more broadly, to join the SIG. We are active on Twitter (@EHPSHabit), and readers can join an email list to receive updates on the SIG activities by visiting www.ehps.net/special-interest-groups, or emailing the SIG Lead at habit@ehps.net

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Establishing a research agenda on habit: a reflection on the SYNERGY expert meeting 2019

Daniel Brown

The focus on researching habit has come in and out of vogue for decades. Definitions of habitual-like processes can be seen as far back as Aristotle, however, have been formalised in the psychological and behavioural sciences since the 19th century (Barandiaran & Di Paolo, 2014; James, 1891; Triandis, 1977). Through the cognitive revolution of the late half of the 20th century, the importance of desire, motives, and “higher-order” cognitive processes eventually came to dominant models of behavioural prediction and psychology more broadly. This was epitomised by the theory of reasoned action (Fishbein & Ajzen, 1975) and later the theory of planned behaviour (Ajzen, 1991). Fishbein and Ajzen’s contemporary Harry Triandis, however, proposed the theory of interpersonal behaviour (TIB) which included habit, recognising that behavioural performance is likely determined by both reasoned, deliberative processes as well as automatic, habitual processes (Triandis, 1977). More recently, the focus on habit and other variable reflecting non-conscious processes has again started to gain traction (Wood, 2017). Given the recent resurgence in habit research, the 2019 SYNERGY expert meeting set out to establish a research agenda on habit in health psychology.

To this end, the expert meeting, headed by Dr Benjamin Gardner and Dr Phillipa Lally, discussed a range of issues related to habit research over the two days preceding the 33rd annual EHPS conference in Dubrovnik, Croatia. Topics included defining habit (Hagger, 2020; Mazar & Wood, 2018), measuring habit (Gardner & Tang, 2014;

Rebar et al., 2018), habit formation and disruption (Lally et al., 2010; Lally & Gardner, 2013), the role of habit (Brown et al., 2019; Wood, 2017), and habit-based interventions (Beeken et al., 2012; Hamilton et al., 2019). Day one began with introductions which quickly demonstrated the breadth and depth of expertise within the habit, health psychology, and behavioural medicine community that was being represented in the meeting. Next, the meeting agenda was set, starting with a discussion on how to define and measure habit and habitual behaviour. What quickly became clear is there were disparate opinions and significant gaps in the literature regarding these issues. Without having a consensus on the definition of habit, and in turn, having agreed-upon tools to measure habit, it is little wonder that there remain such gaps in the broader habit literature. Of particular concern was the lack of a unified theory of habit, combining the knowledge and perspective of learning theory (Watson & de Wit, 2018), neuroscience (Smith & Graybiel, 2014), and social psychology (Wood, 2017). Similarly, the group identified a lack of qualitative research, integrating both expert and lay perspectives to understand the experience of habit (Gardner & Tang, 2014). After exploring current measures of habit, the group discussed the potential need to develop objective measures habit, as well as measures of the different components of the habit process (e.g., implicit measures of the mental ‘cue-response’ association, measure of the habit impulse, or measures of the subjective experience of behavioural automaticity). Many participants agreed that innovations in technology

provides great utility in being able to advance habit measures, such as using ecological momentary assessments on mobile phones (Kwasnicka et al., 2018).

A number of other topics similarly provided significant fodder for debates and discussions including the relatively recent distinction between habitually instigating a behaviour (e.g., habitually dressing in exercise clothes after work) compared to habitually executing a behaviour (e.g., habitually engaging in a specific routine once at the gym; Gardner et al., 2016; Phillips & Gardner, 2016); the existence and role of dormant habits (e.g., an existing mental cue-behaviour link that has not activated behaviour; Gardner, 2012); and the time it takes and way in which habits form, be disrupted, or completely extinguished (Lally & Gardner, 2013; Marien et al., 2018). Through individual reflection, small group, and large group discussions, participants were able to explore each of these topics to identify what is known, unknown, and likely the best avenue of future research.

The SYNERGY meeting was a great opportunity for many reasons. First, rarely opportunities exist whereby researchers from all over the world with an interest in a specific area are able to intensively work together towards shared goals. There is a special, albeit geeky, excitement that brews when one knows they can discuss, in-depth, their topic of interest with people who are genuinely interested. Second, while many of the participants had established relationships, there were still many more who only knew each other by name and had never met. This meeting, therefore, provided an incredible opportunity to establish and strengthen those professional relationships as well as create new research agendas or plans. Last, and perhaps most importantly, it was fun, engaging, and provided an opportunity to establish friends and create lifelong memories. EHPS is one of the friendliest and supportive professional organisations I have been a part of and the

SYNERGY expert meeting epitomises that culture.

I want to thank the EHPS for the grant that enable me to attend the SYNERGY meeting. Flying from Australia to Europe is a great financial burden that I would not have been able to bear without the grant. Further, the meeting allowed me to establish relationships that have gone on to directly support me with a number of habit-focused papers. I look forward to further strengthening those relationships and participants in future EHPS and SYNERGY events.

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