Synergy 2007 reflections (cont'd)

(Continued from page 81)

culture and how to measure it in health-related psychological research. This is identified as an important unanswered question. It seems that despite the high level of migration between European states, and the fluid ability to work and live in different states, there has been limited examination of how culture and health care differences influence our models. Sharing views and expertise created the beginning of a scientific dialogue on how to deal with these issues in research and health practice.

In order to advance dialogue about the influence of culture on illness perceptions and other health-related psychological constructs, we need to provide conceptual clarity regarding the definition and measurement of culture in health psychology research. This was discussed at length in the workshop. One promising approach to the assessment of culture in health psychology could be to use self-construal of the individual within a cultural environment, with assessment via proxy indicators such as nationality, language, religion, and ethnic background. The implication is that conceptually culture might sit *within* theoretical frameworks that represent the self-system, rather than an upstream antecedent of social cognitive variables (as this places culture external to models of, for example, the self-regulatory system).

Practical issues were also considered, with workshop participants working collectively to identify examples and principles of 'good research practice'. This generated excellent critical discussion, for example, regarding the merits/pitfalls of forward and back translation. We also considered how variation in different cultures and health settings might affect the reliability and validity of our research.

In summary the 3-day SYNERGY workshop was highly successful in advancing dialogue about the influence of culture on illness perceptions and other health-related psychological constructs. We believe dialogue at the workshop has created platform for future collaborative opportunities to emerge. We would like to extend our gratitude to Professors' Michael Diefenbach, Alison Karasz, and Jeanne Edman for doing such an excellent job of facilitating the workshop, and thank Jeroen Meganck for his superb organisational skills and warmth in welcoming SYNERY participants to Hasselt. Finally we wish to thank our fellow participants for creating a positive atmosphere of openness and collegiality at this workshop, and for contributing three days of very stimulating discussion. SYNERGY 2007 sowed the seeds for an international agenda for cross-cultural research within health psychology - we look forward to continuing growth in this important area of health psychology.

CREATE 2007 reflections

On the use of theory in *Intervention Mapping*

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Set in the charming city of Hasselt, Belgium and a short distance from the site of the 2007 EHPS conference in Maastricht, the Netherlands, the 2007 CREATE workshop provided participants with an intensive introduction to Intervention Mapping (IM; Bartholomew, Parcel, Kok, & Gottlieb, 2006). Facilitated by Prof. Gerjo Kok, Prof. Herman Schaalma and Dr. Rob Ruiter, the timeliness of a course on intervention design was both notable on a personal level as I begin my PhD, but I suspect also useful to the wider community of new European health psychologists in training. Indeed, the focus of health psychology has clearly shifted away from simple cross-sectional designs re-testing well-known theories and moved towards efforts at engendering actual health behaviour change. The complexity involved therein is suggestive of the need for frameworks to guide researchers interested in designing behaviour change interventions.

Emerging from the health promotion literature, Intervention Mapping provides researchers with a systematic series of steps aimed at designing and evaluating interventions. The steps delineated in IM guide the development of interventions iteratively to ensure maximal consideration of potentially relevant factors that contextualise the behaviour targeted for change. In particular, IM highlights the need to conduct a needs assessment (Step 1), to specify the determinants of the targeted behaviour and the change

(Continued on page 83)

CREATE 2007 reflections (cont'd)

(Continued from page 82)

that the intervention is meant to produce (Step 2), to use theory-based methods to change the identified determinants, and strategies to deliver these methods (Step 3), to develop the actual intervention (Step 4), to consider and plan how the intervention will be implemented in practice (Step 5), and finally to evaluate the effectiveness and process of the intervention (Step 6; Bartholomew et al, 2006). The involvement of the targets of change, those who might deliver the intervention on a wider scale, and the impact of the environment are all essential components of IM.

The 2007 CREATE workshop was of exceptional quality in terms of both presentation and personal utility. The format of the workshop was constituted of structured lectures, the content of which was then applied in case study-based group work to allow workshop participants to work through each of the steps of the framework. This was further aided by the workshop facilitators who each immersed themselves into the work of a respective group. Their expertise and patience were most appreciated and aided considerably in advancing our understanding of the IM process. The group work also set the stage for the social programme which allowed workshop attendees from across Europe (including Finland, the Netherlands, Norway, Germany, Poland, England, Scotland, Wales, Ireland, and even Canada) to meet, to discuss common research, and to enjoy the nightlife that Hasselt has to offer. A further notable highlight was the 1st CREATE football match, an event sure to repeat itself next year.

Reflecting upon the content of the workshop, the way in which theory is used in Intervention Mapping provides a notable topic for further discussion. Firstly, the scope of the use of theory in IM extends beyond the consideration of the individual behaviour level to also consider environmental theories and models at the interpersonal, organisational, community and societal level (Bartholomew et al, 2006). As such, its aim towards consideration of all the potentially relevant contextual factors impacting on the behaviour necessarily invokes the need for a multidisciplinary team-based approach to intervention design, thereby bringing to light the role that the health psychologist can play within these teams. While these broader levels of analysis certainly deserve attention in their own right, the current reflection will focus exclusively upon the use of individual-level behaviour theory in intervention design.

The IM position on the use of theory in developing an intervention is clear: it is a problem-based approach, *not* a theory-testing one (Bartholomew et al., 2006). IM aims to solve health problems by employing insight from a variety of theories to design interventions, and its pragmatic application of theory has shown considerable success. Specifically, the authors advocate a multi-theory approach by identifying all individual-level theories potentially relevant to a particular context, followed by selecting the particular (changeable) constructs from those theories that are deemed to be determinant of the problematic behaviour. Upon identification of the determinant constructs, methods and strategies are then identified to change them (e.g. Francis, Michie, Johnston, Hardeman, & Eccles, 2005). From a pragmatic perspective of wanting to effect change by utilising insights from the constructs included in various theories, IM seems to be a very useful tool for guiding the intervention development process. However, by eschewing the overarching theories in favour of selecting salient constructs from multiple theories IM-based interventions are inherently exclusive to their respective contexts. Is this problematic? One might argue that extracting constructs from their original theoretical models and reassembling them ad-hoc no longer allows the intervention to be categorised as theory-based (at least not as far as the behaviour-level theories are concerned) and might be more accurately construed as construct- and method-based. While the distinction between a theory-based and a construct-based approach has theoretical implications, if it is effective in achieving the aims of IM does it really matter if the constructs are separated from their original theoretical models? Do the mediators and moderators specified in the source theories matter or can we favour the assembly of various constructs from various theories for each context intervened (and can we still call this theory-based)?

Given IM's position on theory testing, it might be argued that these questions are of no importance. Nevertheless, the non-traditional utilisation of the term 'theory-based' by the IM approach suggests a need for clarification. The connotation of a 'theory-based' intervention might suggest that it is based on a particular theory in its entirety (including the theorised and tested causal pathways to behaviour) which is not

(Continued on page 84)

CREATE 2007 reflections (cont'd)

(Continued from page 83)

necessarily what is meant by 'theory-based' in IM. The potential strength of interventions based on a particular theory lies in the wealth of accumulated knowledge underpinning it. An intervention based on a particular established theory can use a causal pathway based on theorised and tested explanatory and/or predictive links and mediators between constructs. The IM approach to the use of theory potentially loses this strength by assembling various constructs which may be relevant and changeable in a particular context but are as such not based on any cumulated knowledge of the application of a particular theory in its entirety. Inherently then, an IM-based intervention will be testing a new causal model of behaviour even though that is not the explicit purpose of the approach.

However, does this matter if what we are aiming for is behaviour change? The answer likely depends upon whether it is reasonable to assume that each context necessarily involves its own distinct set of constructs. If the answer is yes, then the IM approach to the use of theory should be applied widely. However, if the answer is no, then the generalisability, replicability and thus knowledge accumulation offered by employing an established theory seems rather compelling when contrasted against the ad-hoc assembly of constructs which does not offer such possibilities. In an age of high prevalence of behaviour-linked health problems (e.g. obesity, diabetes, cancer) and constrained resources to address them, it seems critical that it be determined whether our resources should be spent operationalising particular theories or whether the IM approach is the way forward.

If approaches to the use of theory such as IM have emerged, it is perhaps because the individual theories may not be sufficient for the applied uses they are subjected to. Could this serve as a rallying call to further develop theory, as others have suggested (e.g. Michie, Rothman, & Sheeran, 2007)? For pragmatic eyes of wanting and often *needing* to intervene, calls for more theory might be met with revolt. However, do these two approaches need necessarily be mutually exclusive? Could the strength of the IM framework be used as the vehicle to develop theory while it is applied to address the challenges of problematic health behaviours? Could we test the context as a moderator within established theoretical models rather than assume that each context warrants a separate causal model? Applied research seems to provide an ideal means to answer these questions (Francis et al, 2007), thereby allowing us to move out of theoretical stagnation while maintaining the fundamental aims of IM. As behaviour change takes a front seat in the field and as tools continue to be developed to allow us to better accumulate a knowledge base (e.g. Abraham & Michie, in press), the way in which theory is utilised seems to be at a crossroads. Do we maintain the conceptual integrity of an existing theory and aim to develop it further or is the ad-hoc assembly of constructs from a variety of theories more effective– and if the latter be true, is this truly still 'theory-based'?

In summary, the CREATE 2007 workshop was a brilliant success and I am in debt to both the organisers and the facilitators for allowing me the opportunity to gain this important skill. It has allowed me to recognise the complexities of intervention design, and provided a framework to guide me through the process. IM highlights the need to consider the wider environmental context's impact upon behaviour, for the systematic development of not only the intervention but also the means with which it is implemented and subsequently evaluated. The role of the health psychologist while seemingly central to the discussion (we are changing individual behaviour after all!) is clearly embedded within a multidisciplinary team. These realisations, along with the thought-provoking perspective on the use of theory advocated by IM have brought me back to the fundamental assumptions of our science and if only for that reason, this workshop has been a great success for me.

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