Invited commentary

New frontiers: a view to the future

Joop T.V.M. de Jong

This final paper first summarises some of the major themes that previous authors have mentioned. The first theme is their endeavour to understand human beings in their ecological context. The second is that they also adhere to a (health) systems approach. The third theme refers to the proposed valuable research developments. This paper then elaborates on three ideas that deserve attention as potential 'new frontiers'. The first is Network Mental Health, referring to the clinical staging model that may solve a range of problems: a new generation of epidemiological research that accommodates cultural expressions of distress, mitigates response bias, prevents outliers in prevalence rates, increases the cross cultural validity of psycho pathological constructs, opens venues to develop transdiagnostic treatments by non specialists, and that may help to bury the perennial universalism versus relativism debate.[1] The second idea is referred to as Community Intervention Capital. Arguing that we need interventions, beneath the primary care level within communities, as the foundations of our public mental health care system and as the crucial source of universal prevention. In low and middle income countries, this involves a wide range of community resources including: healers, teachers, community leaders, extended families and organised religion. Additionally, concerted action of all players could achieve a great deal. The third idea is called Mental Health Mathematics. Mental health professionals are ill equipped for sophisticated mathematical modelling. We need a new generation of research to study causal pathways, robustness and redundancy of interventions in order to improve equity, access to care, life course research, complex health systems and/or stigma related to mental health.

Keywords: cross cultural research, global mental health, clinical staging model, mathematics modelling, mental health

Introduction
Reading this fascinating collection of papers for this special, extra issue of *Intervention*, my aim here is to summarise some of the patterns occurring across such a diverse set of papers. Building on this summary, I will elaborate on three ideas that, in my opinion, deserve attention as potential *'new frontiers'*.

Ecological approaches
Several authors encourage us to think beyond the individual, and understand human beings within their ecological context. Hobfoll (2014), for example, focuses on the resources people rely on in the face of adversity. He discusses the concepts of resource caravans and the association of linked resources, which are sustained within resource caravan pathways. This means that families, organisations and societies create and maintain circumstances that create and maintain resources, but that also often produces the groundwork for resource loss. This fits wonderfully well with the paper of Somasundaram (2014), which argues that, in the situation of massive loss and adversity, we should promote individual and community wellbeing through encouraging positive social processes, such as traditional practices, promoting positive family and community relationships and mobilising grassroots workers. Weine, Durrani, & Polutnik (2014) illustrate that a participatory research approach not only studies how an intervention works, but also how interventions are experienced and perceived by community members, and thus again highlights the importance of situating the individual within a social context. Along the same line, Hinton & Jalal (2014) go further than individual cognitive behavioural therapy

(CBT). They explain that *'contextually sensitive'* CBT requires detailed attention to linguistic, ethnopsychological, ethnophysiological and ethnoreligious variables, as well as a wide range of socioeconomic and ecological characteristics.

Health systems approaches

Another intriguing common thread is the authors' adherence to a *(health) systems approach*. This may not be surprising in view of the long standing experience most of them have in the world of global mental health and trauma. Most contributions focus on higher system levels (families, communities, societies) instead of lower levels (such as proteins, the genome, the brain or pharmacodynamics). All of the authors focus on moving between the micro level of person and family, to the meso, the macro and the exo levels, in terms of Bronfenbrenner (1979). For instance, the thrust of Hinton & Jalal's paper stays closest to the level of body and mind, while Weine, Durrani, & Polutnik (2014); Somasundaram (2014); Murray et al. (2014) and Upadhaya et al. (2014), write about communities, whereas Patel (2014) and Hobfoll (2014) move from the micro to the macro and exo levels of the globe.

Implications for research

Several contributors propose valuable new research developments. Weine et al. focus on the concept of multiplicity, which they define as *'research problems and questions that are multilevel, multi perspective, multi temporal, and/or multidimensional, which draw upon multiple data with respect to persons, times, and spaces, as well as multiple methods of data collection and analysis'*. Patel, aims to decrease the *'credibility gap'* between the world of common people and mental health professionals. He proposes increasing epidemiological thresholds for diagnoses by incorporating the likelihood of benefiting from available biomedical interventions, particularly in reducing impairments.

Somasundaram proposes studying collective trauma using sophisticated multi level statistical analysis, with social capital as a marker. Hobfoll proposes incorporating fuller time sequences, including events prior to and long after trauma. He also draws attention to how adversity accumulates over time, with one adverse circumstance or event increasing the risk of further adversity. His stance shows interesting similarities to the transactional model of Miller & Rasmussen (2014). Upadhaya et al. mention research methodology when they propose studying how nongovernmental organisations (NGOs) link their grassroots expertise to national policies through developing public/private partnerships, with reciprocal accountability between government and NGOs. Murray et al. emphasise the need to adjust interventions to suit the context. They promote a research agenda for dissemination and implementation of existing, evidence based interventions, emphasising the importance of developing measurement tools for low resource settings, and measuring outcome pre and post implementation, preferably with randomised controlled trials. Their checklist of the pitfalls that lurk within conflict settings is a helpful tool for interventionists and researchers alike. Similarly, Hinton & Jalal's checklist of hurdles inherent in transporting a psychotherapeutic intervention from one cultural setting to another, is a beacon for anyone working with immigrants and refugees, or designing treatment across the globe.

What is new in global mental health?

The editors of this issue asked me what are the substantial changes that have occurred in global mental health since the time I started working in low and middle income countries (LMIC). This question triggered a trip down memory lane, back to 1970, when I did research in east Pakistan. Two years

later, this was followed by working in what had become Bangladesh among the returnees from the war of independence, and subsequently, during my involvement as a public health physician in the liberation wars in Africa. It is a tricky question, because it evokes a feeling that increases with age, the feeling of having seen interests and debates flare up, and ebb away. The question also lures one into the imminent risk of Grumpy Old (Wo)Man Syndrome (one of the tasks of gero transcendence that likely eventually awaits all (ageing) readers of this issue). To some extent, my immediate reaction to the question whether there is much change in our field would be *'perhaps not'*, but I will return to this question in the conclusion section of this paper.

I will return to this question because, in my opinion, there is lot of new wine in old bottles. Each generation needs its writers, musicians and health experts. However, that does not necessarily implicate a step forward. For example, in my opinion, the Mental Health Gap Action Programme (mhGAP) approach of the World Health Organization (2010a) is a replica, albeit better thought through, of WHO's policy of the 1980s to '*integrate mental health into primary care*' (Sartorius & Harding, 1983). Despite the success of the previous initiative, the strategy was not widely adopted in LMIC, nor was it sustainable in most of the countries involved at the time, for reasons that are still relevant today (Murthy & Wig, 1983; de Jong, 1996). This is reflected, for instance, in the funds spent on residential care. Three quarters of governments' mental health budgets in LMIC are still spent on psychiatric institutions. On the other hand, what is new over the past years is the growing awareness that high income countries (HIC) are poor role models for LMIC. As illustrated by the fact that until today, HIC spend slightly over 50% of their mental health budget on residential care (Alonso, Chatterji, & Yanling He, 2013).

New areas of interest

The editors of this issue have also asked me to focus on new areas of interest in research and practice that may shape our field's future. Obviously, that is a grand question that can only be tentatively answered with a humble indication of future directions. Yet, I will take up this challenge and build further on my farewell lecture and a recent paper (de Jong, 2013; 2014). For the remaining discussion I will, therefore, add a prism resulting in a rainbow of overarching topics, which are refractions of the contributions of the other authors; addressing three overarching topics, which I (heuristically) call network mental health, community intervention capital and mental health mathematics.

Network mental health

Ever since Freud was inspired by the steam engine to formulate his theory about libidinous drives, our profession has been haunted by linear causality. Still now, we assume a linear course when we assess adverse events in people's lives, check off their symptoms on a list of diagnostic criteria, provide a diagnosis and select a treatment protocol, followed by community care. A majority of mental health professionals realise that this current paradigm neglects the complexity of human life, and yet we dance to the tune of our classification systems, our prevalence figures and our treatment guidelines.

One may, therefore, be tempted to ask the question what power will be able to tip the balance towards a much needed, new paradigm. In my opinion, a paradigm shift should begin with a new classification system. Of the future candidate classification systems (DSM-5.1) (*Diagnostic and Statistical Manual of Mental Disorders*), ICD-11 (*International Classification of Diseases*) and the NIMH's (*National Institute of Mental Health*) *Research Domain Criteria* (RDoC), only the RDoC has the potential to meet external validity criteria, such as shared genetic risk, neural substrates, biomarkers[2] or familiarity

(Kupfer & Regier, 2011). Because it looks across the diagnostic boundaries that are strictly kept by the DSM/ICD, but that are increasingly challenged by scientific research. However, even if NIMH's dream ever comes true, one may wonder who will pay the costs of assessing biomarkers out of the US$ 60 per capita spending that LMICs need to cover basic health care needs (WHO, 2010b, see Murray et al., 2014)?

A serious candidate to replace the current diagnostic system is the clinical staging model, which will solve a range of problems that plagues the field. The clinical staging model uses a dimensional approach towards psychopathology, widely felt as a need that was confirmed in two recent global surveys (Evans et al., 2013; Reed et al., 2013). (For the reader who is less familiar with this field: the dimensional approach means we use a simple scale indicating if someone scores normal or too high, for example, on a symptom, similar to how we measure blood pressure with a high and a low value in medicine, rather than a simplistic categorisation of '*sick*' or '*not sick*'. Rather than asking "*is this symptom present*", a dimensional approach asks: "*to what extent is this symptom present*").

The clinical staging, or network model, describes symptoms of psychopathology as dynamic networks or circuits, impacting each other and crossing diagnostic boundaries. It argues that mental distress and the need for care are present long before a possible clinical diagnosis (Schmittmann et al., 2011; McGorry & Van Os, 2013; Wigman et al., 2013).

A clinical staging model captures the dimensionality of psychopathology in terms of both severity (i.e. it acknowledges the dimensional nature of psychopathology) and time (i.e. it assumes that mental disorders develop over time, rather then emerging out of the blue). In both these terms, it is superior to the current, categorical classification system, as it comes closer to what is seen in clinical practice. In addition, the model of

psychopathology that is the basis of systems like the DSM may be in need of an update. Instead of modelling psychopathology as the result of the unobservable, latent constructs (as is currently the case), a network approach to psychopathology may be fruitful. Such a network approach describes symptoms of psychopathology as dynamic networks, where symptoms can actively impact on each other. Importantly, these dynamics can involve symptoms from multiple diagnoses, thus crossing diagnostic boundaries.

Figure 1 shows the integration of the clinical staging and a network model, and how it relates to a stepped collaborate care approach, and a preventive model with universal, selected and indicated interventions. As Figure 1 shows, it is easy to deduce that such networks of psychopathological symptoms will show large individual differences, explaining the large heterogeneity in symptom manifestation and development seen in clinical practice. To make use of this feature, it is useful, or perhaps necessary, to take an individual approach, zooming in on the level of the person, to model a network of symptoms that is specific for each patient. To this end, intensive longitudinal data should be collected over a longer period of time for each patient. This means that each patient should be followed for at least 60 brief subsequent assessments. In this way, individual development of symptoms can be modelled in detail. This approach, by definition, allows for cultural differences.

If such data are collected in a range of cultures, it will help us to generate a totally new perspective on phenomenology (study of subjective experience) that reinvents psychiatry. The personal, the ecological and technical developments allow a much more precise assessment of the development or resolution of complaints, symptoms and syndromes over time. For example, an application installed on a mobile phone allows easy monitoring of personal psychological experiences (e.g. mood), behaviours (eating,
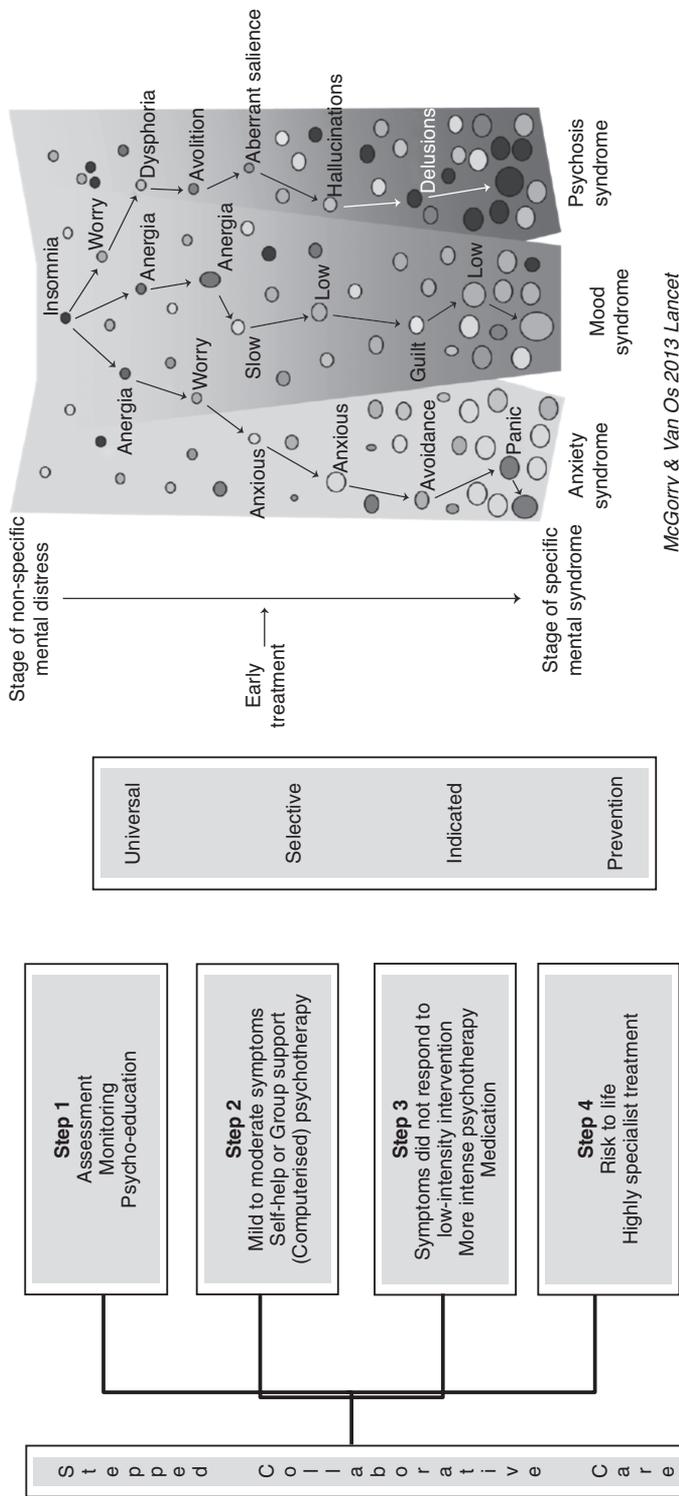
McGorry & Van Os 2013 Lancet

Figure 1: Clinical staging and a network model, stepped collaborate care approach and prevention.

intake of substances), environment (stress, company) and activities (work, study) a number of times per day, or over time.

Why is this so interesting for the field of global mental health and for cultural psychology and psychiatry? Let me summarise several advantages in terms of culturally sensitive epidemiology, public mental health oriented service delivery and the universal debate in psychopathology:

1) The clinical staging model yields a new generation of epidemiological research by taking an individual and developmental approach. The model follows a person whose common daily symptoms, like fatigue or arousal, may either resolve over time, or gradually develop in the direction of psychopathology that may end in, for example, an anxious-depressive syndrome or a psychotic syndrome (see Figure 1) (McGorry & van Os, 2013). The gradual boundary between normality and psychopathology, as advocated by the clinical staging model, allows a focus on early complaints that are influenced by culture (see Figure 1: '*Stage of non specific mental distress*'). Inherent to the logic of the clinical staging model is that it may easily accommodate cultural concepts of distress (CCDs) or idioms of distress (IOD), in the early stage of developing symptoms (Nichter, 2010; de Jong & Reis, 2010; 2013; Hinton & Lewis-Fernandez, 2011; Ventevogel et al., 2013).

For a public mental health approach this gradual transition from CCDs to more serious illness implies that one may intervene at an early stage, prior to entering the health system, with low cost interventions such as self-help groups, befriending, or e-mental health[3] and guided self-help for people with a more formal education. Since CCDs are culturally salient, they will inspire people to seek help from healers, religious practitioners and ritual leaders. Healers can, in this way, play a rational role in the basic tier of the public mental health system, and help to decrease reliance on the formal health system, like in mhGAP. Although, in my view the mhGAP concept is based on the exclusion of helpers, forcing them to remain outside the formal system (de Jong, 2014). The global mental health movement may thus gain impetus by showing more interest in these culturally salient phenomena and expanding the range of helpers and interventions. With mutual training and supervision, healers can join the public health system as practitioners, to whom other caregivers can refer patients with cultural syndromes, IODs and a range of psychosocial problems.

2) A second epidemiological advantage is that the dimensional scoring of psychopathology as advocated by both the clinical staging and the network approach like any type of dimensional diagnostics, enables us to take cultural variation in symptoms into account. This is relevant in relation to response bias related to culturally determined illness behaviour, harsh living conditions, social desirability or acquiescence set. For example, dimensional scoring allows a bandwidth of culturally determined illness behaviour. In this way, a clinician is less inclined to assess an '*exuberant sufferer*' as a '*case*', while missing a person who displays very restrained illness behaviour.

3) A third epidemiological advantage of the network approach is that it may help to prevent skewed prevalence rates and outliers, such as PTSD rates of 0 to 99% and depression rates from 3 to 85% (Steel et al., 2009). Because it does not use root nor stem questions, and no predefined set of criteria, it is less likely to generate false diagnoses and to miss or overestimate sub-syndromal symptom categories. (Imagine a depressed and hungry person who does not answer that '*(s)he lost*

appetite', one of the root questions for depression and a criterion for sub-syndromal depression; that person could easily become a false negative case of depression or sub-syndromal depression, using standard epidemiological instruments). In fact, a network approach would shift our main focus away from diagnoses in general, redirecting it instead to actual symptoms and their interconnections.

4) Because the clinical staging model and the network approach generate diagnostic categories by *post hoc* comparison of individual longitudinal symptom trajectories, cluster analyses will yield culturally valid diagnostic constructs, surrounded by zones of rarity (meaning there is discontinuity between the symptoms of one diagnosis and another, or in other words, there are less misty clouds of overlapping symptoms as happens so often in psychiatry) (Kendell & Jablensky, 2003). If, in the future, we will be able to use networks to develop a new diagnostic system based on the clustering of individual dynamic patterns of symptom interactions over time, it will greatly improve our diagnostic systems. It will end the fraudulent distinction between common mental disorders, such as depression and anxiety, thereby diminishing the artefact of comorbidity, due to an excess of diagnostic categories as is the case with DSM. It will also solve the problem of cross cultural construct validity and the category fallacy, because one does – or should – no longer assume that a cluster of symptoms found in one culture is identical to a symptom cluster in another culture or subcultural group.

5) It will also largely reduce the need for qualitative research to adapt existing epidemiological instruments to other cultures, because the individual approach of the network theory as explained above, in and by itself,

generates culturally and ecologically meaningful categories of psychopathology. There is, therefore, no need to first engage in an extensive collection of vernacular indigenous symptoms and compare them with existing nosologies, such as DSM or ICD (Kohrt et al., 2014). For global mental health this is an important development. Less diagnostic categories pave the way for transdiagnostic modular treatments, such as the common elements treatment approach (CETA) (see Murray et al, 2014). These transdiagnostic modular treatments of behavioural and cognitive therapies may replace the large number of existing treatment protocols. Moreover, they may enable the ethical use of more sophisticated forms of psychotherapy by general health workers and paraprofessionals in LMIC (see van Ginneken et al., 2013), a hypothesis that needs further research.

6) There is no reason to assume that the various classification systems being developed (DSM, ICD, RDoC, clinical staging or network approach) could not be integrated in the long term. This potential integration opens a wide, interdisciplinary research domain involving psychology, cultural psychiatry, neurobiology and the global mental health movement to examine cultural variations of cognitive systems, arousal patterns, emotions and psychopathology.

7) New insights from cultural and social neuroscience and neuro-anthropology support the hypothesis that '*brain moulds culture like culture moulds the brain*' (Chiao, et al., 2009). It is possible that we will find local biologies that undermine our belief in the desirability and feasibility of one global universal classification system. If one day we discover that the paradigm that mankind has one constant and identical brain is obsolete, it might become the ultimate step to transcend

the perennial universalism−relativism, or nature versus nurture debate.

Community intervention capital

Looking back at the years we worked in LMICs, one challenge in the domain of global and public mental health still seems pertinent. Should we give more attention to studying population characteristics of well-being, rather than individual characteristics of psychopathology? Rose's classical words on prevention told us that if causes (of e.g. psychopathology) are the focus, then a targeted intervention strategy would be to identify and treats individuals at risk. However, if causes of incidence are the focus, then intervention strategies targeting the whole population are warranted (Ahern et al., 2008; 2009). Removing the underlying cause dramatically reduces the disease burden, even by only slightly shifting risk levels for all members of the population. In HIC settings, where resources are plentiful, both targeted and population wide interventions may be feasible. In LMIC, with minimal financial and human resources, as many authors of this issue have emphasised, we need to focus more on population wide interventions. Albeit in HIC, a population focus may help us to mitigate the current trend of over treatment of the *'worried well'* (Frances, 2013).

Rose's dictum is even more important within (post) conflict and disaster settings. After exposure to massive stress, about a quarter of the population suffers from PTSD and depression. It is, therefore, astounding that we still focus so much of our attention on a clinical approach. It hardly worked in New York after the terrorist attacks of 9/11, or in New Orleans after hurricane Katrina. The clinical and trauma focused approach was even less successful in settings with 200−300,000 victims as happened after the earthquakes in Haiti in 2010, or Sichuan in 2008, or currently among the war victims in Syria.

The thrust of our interventions should, therefore, focus on the underlying causes. Our over-emphasis on clinical interventions is also surprising as there is much agreement on what could be done on a population level. Over the years, there has been growing consensus among researchers on what interventions should look like. We have realised that we need beneficial transformative change. We agree that distress evokes resilience, which these days we convert to ecological resilience (Norris et al., 2008; Tol et al., 2008; Hobfoll, 2014). We need more cooperation and fine tuning between health professionals and community stakeholders in order to define what is at stake, and who is able to do what (Ventevogel, 2014). For example, in many African and Asian contexts, core values are the family, avoiding shame, conformity to social expectations, respect for elders and ancestors, placing other's needs ahead of one's own, reciprocity, interdependency and modesty (Heppner et al., 2006). In those contexts, family support, respect for authority, religion and spiritual values, including the ancestors and avoidance strategies, may be more important than approach focused strategies (such as exposure) that are preferred modes in individualistic contexts (as mentioned by several authors in this issue). From a western point of view, what may present as maladaptive (e.g. passivity, avoidance or silence) may be appropriate in another context. Therefore, in developing interventions, we need more lateral thinkers who delve into local ways of coping instead of copying western textbooks and treatment guidelines. This implies stimulating primary adaptive capacities, economic development, social capital, information and community competence (Norris et al., 2008; Weine et al., 2014). Interestingly, social approaches were fundamental when a global group of trauma experts formulated five intervention principles to be applied in the immediate aftermath of exposure to major upsetting events: promotion of sense of safety, sense

of self and community efficacy, connectedness, calming, and hope (Hobfoll et al., 2007). It is therefore, obvious that we need cluster trials to test preventative, community oriented initiatives.

There is also much to gain if we change our mindset towards bundling our forces together, instead of competing over resources. We often tend to multiply our organisations and initiatives, driven by the desire to establish a flag, an identity or to obtain funding. The subsequent problem of fragmentation is essentially the same at the level of the government, United Nations (UN), NGO, or universities, and often manifests in unwillingness to share funding or expertise. The consequence is that meagre resources for post conflict reconstruction are wasted on a zillion non sustainable micro initiatives that have much in common, whether labelled as rural development, peacebuilding, psychosocial issues, microfinancing or public health. Most interventions pretend, but often fail to strengthen social and cultural capital, empowerment, community efficacy, community competence, community dynamics, community resilience and wellness. In this regard, we could create considerably more synergy in the prevention of suffering. The rise of new donors, such as multinationals, philanthropists and private initiatives, adds to the problem of fragmentation, resulting in non predictable funding with high dead weight loss[4] (OECD, 2011). The multiplicity of players contributes to the micro versus macro paradox, i.e. on the micro level donor agencies report success, but this success does not show in the growth rate of developing countries due to unproductive expenditure in the public sector (Mosley, 1987; Moyo, 2009). In one of our multisite cost effectiveness studies, it was clear that people gained both psychosocially and economically from a few individual or group sessions (de Jong et al., 2005).

Multiple players, paralleling this fragmentation, contribute to the complexity of health systems in peacetime, compounded by added complexity in times of disasters. Fragmentation has a corollary in science, where many of us claim to think interdisciplinarly, but often find it hard to give in to other disciplines. We would rather die than admit that an *'innovative'* concept could easily fit into pre-existing ideas.

One step forward would be to promote concerted and multi-sectoral action and pooling of resources by the government in times of peace; and by the UN and NGOs when humanitarian emergencies arise. We could also save meagre resources by regarding the provision of health care, or psychosocial services, in normal circumstances as a continuum of post disaster situations, and thereby harmonise funding and reconstruction efforts. Disasters increase pre-existing inequalities, both on a local and a global scale. Whether a disaster strikes in a HIC or LMIC is a more important predictor, than the type of disaster, both in terms of casualties, psychological distress and the burden of refugees. Moreover, the major predictors of ill health, mental health and civil conflicts are the same (Norris, 2002 a,b; WHO, 2002; Harbom, Melander & Wallensteen, 2008; Hewitt, 2008; Pinstrup-Andersen & Shimokawa, 2008; Daar et al., 2007; Collins et al., 2011; de Jong, 2010; 2011; 2014; Wiist et al., 2014). In other words, addressing social inequalities worldwide is the best prevention for war, while also being the best prevention for (non)communicable diseases, and remains true for the medical and psychological consequences of war and disaster.

Mental health mathematics
The third topic I want to mention is that, in my opinion, we need more complex mathematics to advance our field. Although global and public mental health are guided by human ecology and/or systems approaches (Von Bertalanffy, 1968; Bronfenbrenner, 1979), we have not succeeded in quantifying how multiple ecological system levels

interact with each other. Levins (1974) suggested that '*the most difficult general problem of contemporary science is how to deal with complex systems as wholes*'. This inability is in contrast to other disciplines, such as evolutionary biology, game theory or economics, all of which use complex mathematical models that are tested in computer simulations (Nowak & Highfield, 2011). Such an approach, may help us to develop testable models related to cooperation, and to resolve some of our major preoccupations, such as equity, access to care, life course research, complex health systems or stigma. Multilevel linear models (Diez-Roux, 2000) and the causal modelling proposed by Galea et al. (2005) may also improve our understanding of the dynamic relationships among various population groups and guide public mental health prediction. The above mentioned network model in psycho diagnostics using e.g. Multi mode Principal Component Analysis and Mixture-Graphical Modelling also requires advanced mathematics (Wigman et al., 2013; Wardenaar & de Jonge, 2013).

Our need for mathematics is also manifest in day-to-day domains. Apart from the modest scale WHO-CHOICE initiative (Chisholm, 2005), few national or (non)governmental policy planners use models to calculate the capacity of their mental health system on a national, regional or district level. Calculating capacity requires taking public mental health criteria into account, such as prevalence and incidence, locally perceived needs, severity of disorders (in terms of e.g. disability, physical and psychiatric comorbidity, days out of rolestigma), treatability (by healers, e mental health, lay workers, primary care staff, mental health professionals, self-help manuals), expertise, accessibility and knowledge of practitioners (e.g. trained lay and specialist work force, access to training), ethical applicability (e.g. in the use of psychotherapy or pharmacotherapy), or cost effectiveness (de Jong, 2002; 2011). A mathematical approach would enable policy makers to distribute their limited resources in proportion to demographics, socio-economics, national or social insurance, number of hospital beds, duration of hospitalisation, incidence, suicide rates, or stigma. Several authors (such as Murray et al., 2014; Upadhaya et al., 2014) have mentioned the lack of facilities, staff, funds, and transport, as well as the dangers and the high levels of attrition. We may thus wonder how mathematical modelling can help us to reverse these negative feedback loops, to transform despair into resilience, or cycles of violence into peacebuilding? Such public health and mathematical modelling can be combined with network theory, considering the mental health system as a hub among sectors. For example, the economic sector (for income generation among the poor), the social sector (as a safety net), the educational sector (for children and youth), the legal sector and women's organisations (for human rights violations and family violence), consumers (e.g. self-help groups), insurance and other companies.[5]

Conclusion

This extra issue of *Intervention* has highlighted a range of major drivers of future progress of global and public mental health. I will refer back to some of these in my concluding remarks.

Over the past decades we have often struggled to combine high prevalence rates from epidemiological studies with other criteria to gain insight in priorities in service delivery within LIMC. Very often, focusing on prevalence rates, vulnerability groups, community needs or combined measures, our efforts have yielded so many beneficiaries that we would never be able to cover their psychosocial or mental health needs. This is also the case in the resourceful context of e.g. Europe, or the Netherlands, that has 4000 psychiatrists (this is the same number as India or China), with 15–20,000 psychotherapists and numerous other mental health providers, and we still struggle to

cover even people with serious mental disorders. Worse even, in the Netherlands, there appears to be little effort to develop a comprehensive public mental health plan (for our medium size population of 17.5 million people) that encompasses a coherent layering of promotion, prevention, and treatment interventions. Therefore, in both in HIC and LMICs, Patel's suggestion is highly interesting: stop using prevalence estimates generated by standard epidemiological surveys to define the number of people in need of treatment. By focusing on the benefit of interventions and reducing impairments of daily life, a majority of people would probably no longer qualify as '*disordered*'. This could be a solution for a problem that many interventionists face (Rodin & van Ommeren, 2009; Ventevogel, 2005). Additionally, it would obviously be a major step forward if in the future someone would discover a simple and affordable treatment marker such as an epigenetic switch.[6] However, for now, one of the major problems of our profession is that we struggle to straddle treatment with prevention and resilience. There is nothing wrong with the well trodden paths of integrating mental health into primary care, or with the urgency to close the treatment gap. However, we need to learn more about how to build on local resources and local potential. That is the most difficult part of our work, and in my opinion, the greatest challenge for global mental health. Therefore, it is no surprise that many contributions in this issue make an urgent call to look beyond psychiatric diagnoses,such as PTSD, into risk factors and community dynamics (Hobfoll, 2014; Miller & Rasmussen, 2014); to bridge disciplines (Weine et al., 2014; Hinton & Jalal, 2014), use a health systems approach and understand the wider global discourse (Hobfoll, 2014; Patel, 2014; Upadhaya et al., 2014), and pay attention to the dissemination and implementation of the science of what we already know works in actual practice (Murray et al, 2014). These were also the main themes mentioned by the guest editors in their editorial.

Despite all of the uncertainties around prevention, I still believe we should try to look to the population level. A collective approach is paramount from a public mental health perspective where large populations are affected and resources are limited. We measure social and cultural capital, and we write a lot about empowerment, community efficacy and community resilience. However, when it comes to interventions, we are reticent to translate that knowledge into interventions, much less evaluate efficacy. We have to develop those community based interventions as the foundations of our public mental health system, and the crucial source of universal prevention. That is to say, beneath the primary care level and in communities (outside the health care system). To further develop the art of global mental health, we should build on wellbeing, instead of the presence of a psycho pathological diagnosis. In LMIC, this involves a wide range of community resources including healers, teachers, community leaders, extended families and people affiliated with organised religion(s). When looking at the commonalities of initiatives mentioned, it is clear that concerted action of all players within an uprooted country or area could achieve a great deal.

We also need to learn how to do better research on complex systems by studying change on multiple levels, family, community and society, and under what conditions those changes create synergy. We need a new generation of research to study the causal pathways, critical mass, robustness and redundancy of certain interventions by using sophisticated mathematical modelling, which is often alien to our brains that have developed other capacities.

Finally, to get back to the question of if there is substantial changes over the past decades. Yes, in my view the ever refining refraction of research questions into small domains of the global mental health spectrum is a step

forwards. As well as the scientific rigour to reach consensus on best practices. To some extent, this takes place at the detriment of clinical experience and expertise, which unfortunately all too often has resulted in assumptions surrounding good care and unfounded practices. What impresses me as a faithful and constant trait of this unique group of worldwide experts is their lifelong dedication and perseverance, this has resulted in the experience they shared with us, the readers. For this, I am immensely grateful.

Acknowledgements

References

Ahern, J., Jones, M. R., Bakshis, E. & Galea, S. (2008). Revisiting Rose: Comparing the Benefits and Costs of Population-Wide and Targeted Interventions. *The Milbank Quarterly, 86*, 581-600.

Ahern, J., Hubbard, A. & Galea, S. (2009). Estimating the Effects of Potential Public Health Interventions on Population Disease Burden: A Step-by-Step Illustration of Causal Inference Methods. *American Journal of Epidemiology, 169*, 1140-1147.

Alonso, J., Chatterji, S. & Yanling, H. (2013). *The burdens of mental disorders. Global perspectives from the WHO World Mental Health Surveys*. New York: Cambridge University Press.

Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.

Chiao, J. Y., Harada, T., Komeda, H., Li, Z., Mano, Y., Saito, D., ... & Iidaka, T. (2009). Neural basis of individualistic and collectivistic views of self. Human brain mapping, *30*(9), 2813-2820.

Chisholm, D. (2005). Choosing cost-effective interventions in psychiatry: results from the CHOICE programme of the World Health Organization. *World Psychiatry, 4*(1), 37-44.

Collins, P. Y., Patel, V., Joestl, S. S., March, D., Insel, T. R. & Daar, A. S. (2011). Grand challenges in global mental health. *Nature, 475*, 27-30.

Daar, A. S., Singer, P. A. & Persad D. L. (2007) et al. Grand challenges in chronic non-communicable diseases. *Nature, 450*, 494-496.

de Jong, J. T. V. M.. (1996). A comprehensive public mental health programme in Guinea-Bissau: a useful model for African, Asian and Latin American countries. *Psychological Medicine, 26*, 97-108.

(2002). *Trauma, War and Violence: Public Mental Health in Socio-Cultural Context*. New York: Plenum-Kluwer.

de Jong, J. T. V. M., Komproe, I. H. & O'Connell, K. A. (2005). *Effectiveness and cost-effectiveness of mental health care in low-income developing countries: Burundi, Gaza, Nepal and Uganda* (1-120). Washington DC: World Bank.

de Jong, J. T. V. M.. (2010). A public health framework to translate risk factors related to political violence and war into multilevel preventive interventions. *Social Science & Medicine, 70*, 71-79.

de Jong, J. T. V. M.. (2011). (Disaster) Public Mental Health. In: D. J. Stein, M. J. Friedman & C. Blanco (Eds.), *Trauma and Mental Health: Resilience and Post-traumatic Disorders* (217–262). London: Wiley-Blackwell.

de Jong, J.T.V. M. (2013). *Soul searching, a journey into global mental health*. Amsterdam: VU Medical Center. Farewell speech, May 31st, 20130, pp.1-32.

de Jong, J. T. V. M.. (2014). Challenges of creating synergy between global mental health and cultural psychiatry. *Transcultural Psychiatry* doi: 10.1177/1363461514557995.

de Jong, , & Reis, R. (2010). Kiyang-yang, a West African postwar idiom of distress. *Culture, Medicine and Psychiatry, 34*, 301-321.

de Jong, , & Reis, R. (2013). Collective trauma processing: Dissociation as a way of processing postwar traumatic stress in Guinea Bissau. *Transcultural Psychiatry, 50*(5), 644-661.

Diez-Roux, A. V. (2000) Multilevel Analysis in Public Health Research. *Annual Review of Public Health 21*, 171-192 DOI: 10.1146/annurev.publhealth.21.1.171.

Evans, S. C., Reed, G. M., Roberts, M. C., Esparza, P., Watts, A. D., Mendonca Correia, J., Ritchie, P., Maj, M. & Saxena, S. (2013). Psychologists' perspectives on the diagnostic classification of mental disorders: Results from the WHO-IUPsyS Global Survey. *International Journal of Psychology, 48*(3), 177-193.

Frances, A. (2013). Saving Normal. New York: Harper Collins.

Galea, S., Ahern, J. & Karpati, A. (2005). A model of underlying socioeconomic vulnerability in human populations: evidence from variability in population health and implications for public health. *Social Science & Medicine, 60*, 2417-2430.

Glassman, A., & Chalkidou, K. (2012) Priority Setting in Health Building institutions for smarter public spending. *A report of the Center for Global Development's Priority-Setting Institutions for Global Health Working Group.* Washington: Center for Global Development.

Harbom, L., Melander, E. & Wallensteen, P. (2008). Dyadic dimensions of armed conflict, 1946-2007. *Journal of Peace Research, 45*, 697-710.

Heppner, P. P., Heppner, M. J., Wang, Y.-W., Lee, D.-G., Park, H.-J. & Wang, L.-F. (2006). Development and Validation of a Collectivist Coping Styles Inventory. *Journal of Counseling Psychology, 53*(1), 107-125.

Hewitt, J. (2008) *Trends in global conflict, 1946–2005, in Peace and Conflict 2008* (J. Hewitt, J. Wilkenfeld & T. Gurr (Eds.)), Boulder: Paradigm Publisher.

Hinton, D. E. & Lewis-Fernández, R. (2011). Idioms of distress among trauma survivors: Subtypes and clinical utility. *Culture, Medicine and Psychiatry, 34*, 209-218.

Hinton, D. E. & Jalal, B. (2014). Guidelines for the implementation of culturally sensitive CBT among refugees and in global contexts. *Intervention 12(S1) this issue.*

Hobfoll, S. E., Watson, P., Bell, C. C., Bryant, R. A., Brymer, M. J., Friedman, M. J., ... & Ursano, R. J. (2007). Five essential elements of immediate and mid-term mass trauma intervention: Empirical evidence. Psychiatry: Interpersonal and Biological Processes, *70*(4), 283-315.

Hobfoll, S. (2014). Resource caravans and resource caravan passageways: A new paradigm for trauma responding. *Intervention 12(S1) this issue.*

Kendell, R. & Jablensky, A. (2003). Distinguishing between the validity and utility of psychiatric diagnoses. *American Journal of Psychiatry, 160*, 4-12.

Kohrt, B. A., Rasmussen, A., Kaiser, B. N., Haroz, E. E., Maharjan, S. M., Mutamba, B. B., de Jong, J. & Hinton, D. E. (2014). Cultural concepts of distress and psychiatric disorders: literature review and research recommendations for global mental health epidemiology. *International Journal of Epidemiology, 43*, 365-406.

Kupfer, D. J. & Regier, D. A. (2011). Neuroscience, Clinical Evidence, and the Future of Psychiatric Classification in DSM-5. *American Journal of Psychiatry, 168*, 672-674.

McGorry, P. & Van Os, J. (2013). Redeeming diagnosis in psychiatry: timing versus specificity. *Lancet, 381*, 343-345.

Miller, K. E. & Rasmussen, A. (2014). War experiences, daily stressors, and mental health five years on: Elaborations and future directions. *Intervention 12(S1) this issue.*

Mosley, P. (1987). *Foreign Aid: Its Defense and Reform.* University Press of Kentucky. ISBN 0-8131-1608-2.

Moyo, D. (2009). *Aid: Why Aid Is Not Working and How There Is a Better Way for Africa.* Douglas & Mcintyre. ISBN 978-1-55365-542-8.

Murray, L. K., Tol, W., Jordans, M., Sabir, G., Amin, A. M., Bolton, P.,. .. Thornicroft, G. (2014). Dissemination and implementation of evidence-based mental health interventions in post-conflict, low-resource settings. *Intervention*, 12(S1), this issue

Murthy, R. S. & Wig, N. N. (1983). The WHO Collaborative Study on Strategies for Extending Mental Health Care, IV: A training approach to enhancing the availability of mental health manpower in a developing country. *American Journal of Psychiatry, 140*, 1486-1490.

Nichter, M. (2010). Idioms of distress revisited. *Culture, Medicine, and Psychiatry, 34*, 401-416.

Norris, F., Friedman, M., Watson, P., Byrne, C., Diaz, E. & Kaniasty, K. (2002a). 60,000 Disaster victims speak: Part I, an empirical review of the empirical literature, 1981-2001. *Psychiatry, 65*, 207-239.

Norris, F., Friedman, M. & Watson, P. (2002b). 60,000 Disaster victims speak: Part II, summary and implications of the disaster mental health research. *Psychiatry, 65*, 240-260.

Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F. & Pfefferbaum, R. L. (2008). Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness. *American Journal of Community Psychology, 41*, 127-150 doi: 10.1007/s10464-007-9156-6.

Nowak, M. & Highfield, R. (2011). SuperCooperators: Altruism, evolution, and why we need each other to succeed. Simon and Schuster.

OECD, (Organisation for Economic Co-operation and Development). (2011). *Aid Effectiveness 2005-10: Progress in implementing the Paris Declaration.* Paris: OECD.

Patel, V. (2014). Rethinking mental health care: bridging the credibility gap. *Intervention 12(S1) this issue.*

Pinstrup-Andersen, P. & Shimokawa, S. (2008). Do poverty and poor health and nutrition increase the risk of armed conflict onset? *Food Policy, 33*, 513-520.

Reed, G. M., Roberts, M. C., Keeley, J., Hooppell, C., Matsumoto, C., Sharan, P., . . . Medina-Mora, M.E. (2013) Mental Health Professionals' Natural Taxonomies of Mental Disorders: Implications for the Clinical Utility of the ICD-11 and the DSM-5. Journal of Clinical Psychology, 69, 112, 1191 – 1212.

Rodin, D. & van Ommeren, M. (2009). Commentary: Explaining enormous variations in rates of disorder in trauma-focused psychiatric epidemiology after major emergencies. *International Journal of Epidemiology, 38*, 1045-1048.

Sartorius, N. & Harding, T. (1983). The WHO collaborative study on strategies for extending mental health care, I: the genesis of the study. *American Journal of Psyhiatry, 140*, 1470-1473.

Schmittmann, V. D., Cramer, A. O. J., Waldorp, L. J., Epskamp, S., Kievit, R. A. & Borsboom, D. (2011). Deconstructing the construct: A network perspective on psychological phenomena. *New Ideas in Psychology. doi:10.1016/j.newideapsych.2011.02. 007.*

Somasundaram, D. (2014). Addressing Collective Trauma: Conceptualizations and Interventions. *Intervention 12(S1) this issue.*

Steel, Z., Tien Chey, Silove, D., Marnane, C., Bryant, R. A. & van Ommeren, M. (2009). Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement. A systematic review and meta-analysis. *Journal of the American Medical Association, 302*(5), 537-549.

Tol, W. A., Jordans, M. J. D., Reis, R., & de Jong, J.T.V.M. (2008). Ecological resilience: Working with child-related psychosocial resources in war-affected communities. In D. Brom, R. Pat-Horenczyk & J. Ford (Eds.). *Treating Traumatized Children: Risk, Resilience, and Recovery.* London: Routledge.

Upadhaya, N., Luitel, N. P., Koirala, S., Adhikari, R. P., Gurung, D., Shrestha, P.,. .. Jordans, M. J. D. (2014). The role of mental health and

psychosocial support NGOs: Reflections from post-conflict Nepal. *Intervention, 12* (S1), this issue.

Van Ginneken, N., Tharyan, P., Lewin, S., Rao, G. N., Meera, S. M., Pian, J.,. . .Patel, V. (2013). Non-specialist health worker interventions for the care of mental, neurological and substance-abuse disorders in low- and middle-income countries. *Cochrane Database of Systematic Reviews*, 11.

Ventevogel, P. (2005). Psychiatric epidemiological studies in Afghanistan. A critical review of literature and future directions. *Journal of Pakistan Psychiatric Association, 2* (1), 9-12.

Ventevogel, P., Jordans, M., Reis, R. & de Jong, J. (2013). Madness or sadness? Local concepts of mental illness in four conflict-affected African communities. *Conflict & Health, 7,* 3 doi: 10.1186/ 1752-1505-7-3.

Ventevogel, P. (2014) Integration of mental health into primary health care in low income countries: how to avoid medicalization. *International Review of Psychiatry.* In press.

Von Bertalanffy, L. (1968). *General System theory: Foundations, Development, Applications.* New York: George Braziller. revised edition 1976: ISBN 0-8076-0453-4.

Wardenaar, K. J. & de Jonge, P. (2013) Diagnostic heterogeneity in psychiatry: towards an empirical solution. BMC Medicine, 11:201. http://www.biomedcentral.com/1741-7015/11/201.

Weine, S. M., Durrani, A. & Polutnik, C. (2014). Using Mixed Methods to Build Knowledge on Refugee Mental Health. *Intervention 12(S1) this issue.*

Wigman, , Van Os, J., Thiery, E., Derom, C., Collip, D., Jacobs, N. & Wichers, M. (2013). Psychiatric Diagnosis Revisited: Towards a System of Staging and Profiling Combining Nomothetic and Idiographic Parameters of Momentary Mental States. *PLOS ONE, 8* (3), e59559 www.plosone.org.

Wiist, W. H., Barker, K., Arya, N., Rohde, J., Donohoe, M., White, S., . . . G., Hagopian, A.;l; (2014) The Role of Public Health in the Prevention of War: Rationale and Competencies. *American Journal of Public Health, 104,* e34-e47. doi: 10.2105/ AJPH.2013.301778.

World Health Organization. (2002). *World Report on Violence and Health.* Geneva: World Health Organization.

World Health Organization. (2010a). *mhGAP intervention guide for mental, neurological and substance use disorders in non-specialized health settings: Mental Health Gap Action Programme (mhGAP).* Geneva: World Health Organization.

World Health Organization. (2010b). *The World Health Report: health systems financing.* Geneva: World Health Organization.

---

[1] The Universalism vs. Cultural Relativism debate has existed in the domain of psychopathology for a century. Universalism refers to the notion that psychopathology is universal and applies to every human being. Cultural Relativism argues that psychopathology is culturally dependent. The debate is now also used e.g. in the public discourse on international law and human rights. Universalism refers to the notion that human rights are universal and should apply to every human being. Cultural Relativists object, and argue that human rights are culturally dependent, and that no moral principles can be made to apply to all cultures.

[2] A neural substrate is a term used in neuroscience to indicate a part of the nervous or brain system that underlies a specific behavior or psychological state. A biomarker, or biological marker, generally refers to a measurable indicator of some biological state or condition. Biomarkers are often measured and evaluated to examine normal biological processes, pathogenic processes, or pharmacologic responses to a therapeutic intervention. Biomarkers are used in many scientific fields.

[3] e mental health are mental health services and information delivered or enhanced through the internet and related technologies.

[4] Deadweight loss (also known as excess burden or allocative inefficiency) is an economic term indicating a loss of economic efficiency that can occur when equilibrium for goods or service is not achievable. Causes of deadweight loss can include monopoly pricing (in the case of artificial scarcity), externalities, taxes or subsidies, and binding price ceilings or floors (including minimum wages). The term deadweight loss may also be referred to as the excess burden of monopoly or taxation. Among other situations, it may occur when one producer who has a monopoly on a product, and may charge whatever price will yield the greatest profit.

[5] In addition, current policy excludes efficiency gains that can be obtained (e.g. by switching from an optimal to a suboptimal treatment mix), in, say, the treatment of epilepsy or psychosis with older versus newer drugs (Glassman & Chalkidou, 2012).

[6] Epigenetic switch refers to changes in gene expression (if the gene is active or inactive). The underlying DNA sequence remains the same. These changes can be transmitted to offspring. Epigenetic change is a regular and natural occurrence, but can also be influenced by several factors including, the environmental states or developments lack of food, lifestyle, or disease.

Joop T.V. M. de Jong MD, PhD, is a staff member of the Amsterdam Institute of Social Science Research (AISSR) of the University of Amsterdam, Emeritus Professor of Cultural Psychiatry and Global Mental Health at the VU University, and Adjunct Professor of Psychiatry at Boston University. He founded TPO, a large relief organization in mental health and psychosocial care of (post) conflict and post-disaster populations in over 20 countries in Africa, Asia, and Europe. Joop de Jong worked part-time with immigrants and refugees in the Netherlands. He publishes in the field of cultural psychiatry, public and global mental health, epidemiology, psychotraumatology and medical anthropology.
email: jtvmdejong@gmail.com