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## **Precision psychiatry: Promises made – promises to be kept?**

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Following the wave of enthusiasm about the emergence of “personalized medicine” – more adequately renamed “precision medicine” considering medicine cannot be anything but personalized –, a growing number of authors have endeavored to transpose this approach to psychiatric disorders in order to promote “precision psychiatry” and its promises.

Precision psychiatry is presented as a “paradigm shift”, namely a fundamental change in concepts and practices of psychiatry, that would be based on the use of new technologies and on the aggregation of data stemming from multimodal assessment of patients (ranging from psychopathology, environmental exposure and self-report to neurobiology, brain imaging and genetics, to name a few), which should allow us “to reformulate our understanding of mental illness as disorders of brain functioning” (1). We are aware that Fernandes et al.’s stance might not be representative of all those who pursue the goal of developing precision psychiatry, as other authors take a more nuanced stance (2); we have nonetheless chosen this paper as an emblematic example to illustrate our point of view that an inflated rhetoric contaminates the realm of science, which might be erroneously associated with the ideas of strict objectivity and integrity.

We acknowledge that psychiatric research should try to integrate “data from physiological recordings, brain imaging, ‘omics’ biomarkers, environmental exposures and self-reported experience” and take advantage of the “advanced computational tools capable of analysing large datasets” be they biological, psychological or social (1). We also applaud the efforts to conceive different sources of information in precision medicine and precision psychiatry. Nevertheless, our impression is that the proponents of this approach are currently guided by a combination of *utopia* (given the yet to come benefits of precision psychiatry) and *euphoria* (given their conviction that it could lead to a “paradigm shift” and to a “complete redesign of the landscape of mental illness”) (1). Indeed, while we all hope for a better understanding of psychiatric disorders, three major concerns should dampen the euphoria associated with precision psychiatry, in order both to prevent disillusion and to avoid a pendulum effect where existing beneficial clinical approaches would be questioned and disregarded due to their lack of a biological basis.

First, the epistemological foundation of the emerging approach of precision psychiatry should be critically examined. When the proponents of precision psychiatry claim that “it is the right time to reformulate our understanding of mental illness as disorders of the brain functioning” (1), there is something missing. Humans – be they called normal subjects or patients affected by psychiatric disorders – cannot be reduced to their brain, whether it is disordered or not. Humans are essentially constituted by a biography, and this biography as a human experience is embodied and social too: it is “in” the body and “in” the environment as much as it is “in” the mind (3). Biography, which is not just “in the brain”, impacts how patients conceive themselves, perceive the world and are considered by others. It plays a crucial role in the pathogenesis and the salutogenesis of psychiatric disorders, and the understanding of its meaning is key in the therapeutic process and therapeutic alliance. Moreover, to capture biography and to aggregate it with available – neurobiological, behavioral, etc. – data, as suggested by proponents of precision medicine (4), also seems an impossible endeavor, because of the elusive, constantly evolving, and kaleidoscopic nature of biography, which is moreover subjected to changes in interpretation over time (5). While some aspects of patients’ bodily condition (such as somatic co-morbidities or physiological changes) and of their social environment (such as marital status, level of education and income, country of origin etc.) can easily be transformed into bits of analyzable data, the wide inter-individual variability of how these aspects are experienced is likely to exceed our capacity to use this information without losing most of its meaning. However, interdisciplinary collaboration between psychiatrists/psychologists and social scientists, competent to work with highly subjective information, could lead to a possible integration of the biological, the psychological and the social, all of utmost importance in the development and treatment of psychiatric disorders.

Second, the restricted focus on patient characteristics minimizes, or even denies, the role of the psychiatric clinicians and the therapeutic relationship as well as of the medical environment, which are all embedded in the broader socio-cultural context of health care. Indeed, Fernandes et al. refer to the clinician as a “clinical scientist” who “will have to develop clinical guidelines specifying how the new developed technologies should be employed and clinically evaluated” (1). A disappearance of the clinician harbors

great many risks: the clinician is an essential element in the recovery process of the patient, as demonstrated by a large body of research on the crucial role of therapeutic alliance on outcome (5). The same holds true for the medical environment, which can either provide the necessary resources to psychiatric patients to regain autonomy, or contribute to their chronification. Finally, society at large not only shapes what is to be considered as “normal” or “pathological”; it also contributes to stigmatizing or de-stigmatizing the mentally ill, and offering them the possibility of evolving psychologically and socially despite their difficulties. In other words, many important dimensions of knowledge (ranging from psychology to sociology and anthropology) accumulated over the years would be at risk to become disregarded within a narrowly defined precision psychiatry approach and the person affected by psychiatric disorders would be reduced to an object of big data, living in an a-symbolic world. From a clinical perspective, new sources of information on the biological causes of psychiatric disorders do not exclude combined approaches, where psychotherapy, biologically-driven treatments and social rehabilitation work hand-in-hand for the benefits of these often very vulnerable patients. Experienced clinicians do not oppose different treatment modalities, and competent neuroscientists respect the complexity of psychiatric disorders; together, they could make a difference and alleviate the suffering of psychiatric patients and their significant others.

Third, economy has invaded the medical field and psychiatry will not escape from this pressure. The increasing competition within health care systems, including clinical and scientific resources, might have some “healthy” consequences. However, when competition is unfair because of biased (dominant) discourses, this can have serious consequences for our patients. The claim that precision psychiatry “promises to transform the psychiatric landscape” (1) is especially worrisome in this context. “To promise” seems here to be the key word; however, the authors’ intention is not to stress the uncertainty of future benefits but to underline the transformational power of precision psychiatry. It has been shown that “medical breakthroughs” such as, for instance, announced by the Human Genome project can reinforce certain theories circulating in the public sphere (e.g., genetic determinism) and influence attribution of resources to the scientific community (e.g., by neglecting research on social determinants of health and

illness) (5). It is also interesting to observe the discursive rapprochement of precision psychiatry and precision oncology and the appearance of the well-known rhetoric of the “War on Cancer”: the authors (1) do not use the example of the “war on cancer” to critically reflect on its rhetoric, but to state that this “war” started in 1971 and “is only now providing dividends” (we appreciate the term borrowed from economy). As mentioned by Fernandes et al. (1), what we need is the development of new and better pharmacological and non-pharmacological treatments; therefore different disciplines working in the field of psychiatry should not be put into a ferocious competition for resources. On the contrary, we should support each other and welcome a truly interdisciplinary approach to enable patients with psychiatric disorders to get the best curative treatment, to decrease their suffering and to help those with persistent deficits to integrate into society without being stigmatized.

We have to admit that we cannot foresee if the promises of precision psychiatry will or will not be fulfilled, and we also believe that there should be no censorship, when it comes to innovative ideas in research. However, we consider it necessary to be prudent, given past experiences and disappointments in the announcement of scientific progress (5).

In conclusion, precision psychiatry as conceptualized by some of its proponents reduces the individual and collective human experience to combined units of data. It neglects constitutive elements of human existence and experience, denies the embodiment of the mind, the social self, the role of the therapeutic environment and alliance as well as society as a whole, and fails to integrate different disciplines which produced most relevant information on mental illness. The main function of the claim that this “paradigm shift” will lead “to reformulate our understanding of mental illness as disorders of brain functioning” (1) seems thus to solely contribute to the flow of discourse promising major scientific breakthroughs.

We agree that “Art is I; Science is We”, and we also hope that “the day will come when science is fully incorporated into psychiatry – a medical specialty deemed as highly subjective” (1). Where we differ is in that we do not consider that the collective change should be from “I do” to “We do” (1); it should rather be to a stance of “I do and We do”.

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## References

1. Fernandes BS, Williams LM, Steiner J et al. (2017) The new field of “precision psychiatry”. *BMC Med* 15: 80.
2. Henderson S, Boyce P (2018) Landscapes of tomorrow: Precision psychiatry and beyond. *Aust New Zeal J Psychiatr* 52:1015-1018.
3. Masson M, Gaillard R (2018) Could psychiatry become the future of neurology. *Rev Neurol* 174: 489-490.
4. Horwitz RI, Hayes-Conroy A, Singer BH (2017) Biology, social environment, and personalized medicine. *Psychother Psychosom* 86: 5-10.
5. Stiefel F, Bourquin C, Saraga M (2017) Losing the “Person” in Personalized Medicine. *Psychother Psychosom* 86: 300.