Genes Nutr (2007) 2:93–94
DOI 10.1007/s12263-007-0021-x

PROCEEDINGS

Personalised diet: is it doable? Individuality at different sites of nutrigenomic practice

Bart Penders

Published online: 19 September 2007

Keywords Personalised diet · Doability · Categorisation · Ethical and social issues

Introduction

Personalised diets (PD) are 'the present', 'the future', 'of no interest' or 'impossible', depending on whom one asks. However, in my research I will show that we should not argue about the PD in a digital way, yes or no, and that it is more fruitful to investigate where and how the PD is 'doable'. Moreover, I will argue that although constructing doable problems is a very practical process, it ought not to be ignored that this very process might have unintended social and ethical consequences.

Doability

The science researcher Fujimura has introduced the term 'doability' to stress that scientists do not just study theoretical problems. On the contrary, from the perspective that scientific work is essentially practical work she argues that scientists, to analyse a problem, have to make that scientific work doable in a concrete scientific practice. That means, that work tasks have to be made doable on various levels of the work organisation: the experiment, the laboratory and the relevant social worlds [1, 2]. So, to construct doable problems, the necessary equipment, tools, skills and the like need to be available to make an experiment work. Furthermore, the laboratory needs to be organised, equipped and modelled accordingly. Finally support must be recruited in terms of funding and foreseen relevance in application.

Achieving doability on all three levels requires a lot of work: various elements in the research situation have to be manipulated and several strategic organisational decisions have to be made in order to construct a doable problem [1, 2]. So, at some locations a problem is doable, whereas at others it is not.

The (un)doable personalised diet

At some work places the PD is not doable at all. Scientists exclusively working with animal models or genetically identical cell lines, for instance, have no access to inter-individual variation. In this world, the PD is undoable. The main ingredient in this world is missing: the individual. In a second, smaller group of work places, due to their institutional nature and organisation researchers have patient (or healthy volunteer) access. When the analysis is not directed towards this variation, it will be actively excluded (e.g. as biological noise). Where it is considered relevant, researchers have made the PD doable by redefining it: instead of the *really* individualised diet, they constructed the PD as based upon a limited number of markers. This way, the bulk of human variation is excluded and the remaining variation is used to assign a diet to specific *risk groups*. Instead of individualised diets one can distinguish between certain *type-diets*. So, nutrigenomics scientists in these laboratories actively modify the meaning of *personalised* to make the (not-sopersonalised) PD doable. In the process of doing so they classify individuals into categories: Twenty-two SNP's including four non-synonymous were detected in SLC23A1. Nearly all of the

B. Penders (✉)
Health Ethics and Philosophy, Maastricht University,
PO Box 616, 6200MD Maastricht, The Netherlands
e-mail: b.penders@zw.unimaas.nl

SNPs in SLC23A1 were population specific in either African Americans or Caucasians, including the four non-synonymous SNPs. All non-synonymous SNPs but the exon 8 VC264M conversion, which had a very low frequency in the Caucasian population, were only observed in the African American population. Haplotype analysis indicated a single haplotype block for the SLC23A1 gene as demonstrated for African American population would be mainly effected by functional consequences of a variation. The current recommendations are based in part on pharmacokinetic studies in healthy Caucasian volunteers [3]. Outside the laboratory, in connecting nutrigenomics and the social world, the undoability of the PD is not discussed. On the contrary, it is still spoken of the PD and of individual variation. Social scientists and philosophers, reflecting on genomics, continue discussing the threats and benefits of the PD. However, these scholars do not need to solidify doability on the level of practical laboratory work (the levels of experiment and laboratory). Also nutrigenomics scientists continue speaking of the PD, when discussing the fruits of nutrigenomics for the future. When addressing the future, one can abstract from the practical requirements and limitations of actual laboratory work.

Conclusion: consequences of the doable PD

I state that doability in terms of the PD is situated at a limited number of sites and levels. Not all laboratories have access to inter-individual variation. Scientists successfully mobilising the PD have altered the notion of 'personalised'. In practice, the PD is not directed at the individual but at subgroups, *risk-groups* in the population. The practice of PD has become a practice that categorises and classifies people [4].

Those who control the assignment of the diet, impose categories on the population assigning individuals to subgroups [4]. Categorisation has become part of the PD-infrastructure and carries consequences of its own. The authors of the except above, taken from the Personalised Nutrition Conference at Palma de Mallorca 2005, use a limited amount of inter-individual variation to strengthen existing ethnic categories. Categories can also be based on diseases, symptoms, geography, gender or age and can be based upon SNP or phenotypic markers and classification processes may even give rise to new categories. Assignment to certain groups may invoke asymmetries in access (through restriction or prescription) to certain goods, such as foods (as a result of the diet-type-classification) or political and/or financial asymmetries as a result of being classified into a risk-group. I argue for the recognition of the social, political and ethical dimension of this categorisation as an unintended effect of constructing a doable PD.

Acknowledgments I would like to thank I van Hoyweghen and K Horstman for reading draft versions. This research is supported by the Netherlands Organisation for Scientific Research (NWO).

References

1. Clarke AE, Fujimura JH (1992) What tools? Which jobs? Why right?. In: Clarke AE, Fujimura JH (eds) The right tools for the job at work in twentieth-century life sciences. Princeton University Press, Princeton, pp 3–46
2. Fujimura JH (1996) Crafting science: a sociohistory of the quest for the genetics of cancer. Harvard University Press, Cambridge, p 322
3. Eck P, Erichsen H-C, Taylor JG, Corpe C, Chanock SJ, Levine M (2005) Genomic and functional analysis of the sodium-dependent vitamin C transporter SLC23A1-SVT1. Poster Presentation, Personalised Nutrition Conference, Palma de Mallorca, Spain
4. Bowker GC, Leigh-Star S (1999) Sorting things out: classification and its consequences. In: Bijker WE, Carlson WB, Pinch T (eds) Inside technology. MIT, Cambridge, p 377