

How to generate a NewSSC analog of the Genetic Analysis Workshops?

Peter Taylor, 20 April 08

Last year I came across the Genetic Analysis Workshops (see <http://www.gaworkshop.org/> and excerpts in attachment 1) and wondered if NewSSC could adopt/adapt two of their features:

- scenarios distributed in advance that invite prospective participants to develop in-depth, innovative responses, some of which are then presented and discussed at the actual workshops;
- widespread attention to and adoption of the innovations (in the case of the GAWs, through attendance at the workshops and publication of responses).

My initial thinking is that, where GAWs focus on analysis of data, a NewSSC version could elicit well-thought out approaches that bring the social contextualization of science into education, public outreach, engagement with activists, collaborations with researchers, and other activities beyond current disciplinary and academic boundaries. Sessions at the actual workshops could include show-and-tell the approaches, pre-prepared commentaries, interactive activities excerpted from the approaches, and so on. Pressure during or after the workshops to generate products would be absent because products would already have been submitted in advance of the workshops.

I am looking for guidance on how best to proceed with regard to these immediate challenges:

- thinking through the differences between what GAWs offer researchers and what the NewSSC version would;
- writing scenarios that elicit "in-depth, innovative responses" from researchers across a range of field;
- getting the word out to relevant outlets and suitable people across disciplines and getting responses by a deadline well in advance of the workshops;
- establishing an active review/advisor group to help make this happen and to review submissions (if there are more than can be presented at the actual workshop);
- identifying suitable means and media for dissemination and uptake of outcomes; and
- other aspects or reframings or questions not thought of.

You may have guidance to give on these points at a general level, but you are also welcome to address the points through the following specific proposal: Approximately \$4500 for expenses and stipends for presenrers would be available from my department and residual funds in a Small Grant for Exploratory Research if the workshop related directly to "The Implications of Heterogeneity for the Philosophy, History, Sociology, and Science of Biological Determinism" (for elaboration, see <http://www.faculty.umb.edu/pjt/4S06.html> and excerpts in attachments 2-4.)

During the rest of this short activity (105 minutes in total) you should follow whatever leads or angles of inquiry interest you most, consult with me (using signup sheet to book a time) where clarification/elaboration is needed, prepare a paragraph of two of notes or text to guide me in developing the general idea and/or the specific proposal, and give a 2-minute report back to group as a whole in the last 30 minutes. If you give a name to your inquiry on the sheet on the wall others may trade ideas with you, but there is no expectation of your working in groups. If you type your notes, please send them by email to peter.taylor@umb.edu. I'll arrange for everything to be assembled onto <http://sicw.wikispaces.com/n08newworkshop>.

Attachment 1

(from <http://www.gaworkshop.org/>)

The Genetic Analysis Workshops (GAWs) are a collaborative effort among genetic epidemiologists to evaluate and compare statistical genetic methods. For each GAW, topics are chosen that are relevant to current analytical problems in genetic epidemiology, and sets of real or computer-simulated data are distributed to investigators worldwide. Results of analyses are discussed and compared at meetings held in even-numbered years.

More than a year before each Genetic Analysis Workshop, suggestions for topic and appropriate data sets are solicited from people on the GAW mailing list (which now includes more than 1500 individuals). Topics are chosen and a small group of organizers is selected by the GAW Advisory Committee. Data sets are assembled, and six or seven months before each GAW, a memo is sent to individuals on the GAW mailing list announcing the availability of the GAW data. Included with the memo is a short description of the data sets and a form for requesting data. The form contains a statement to be signed by any investigator requesting the data, acknowledging that the data are confidential and agreeing not to use them for any purpose other than the Genetic Analysis Workshop without written permission from the data provider(s). Data are distributed by the ftp or CD-ROM or, most recently, on the web, together with a more complete written description of the data sets.

Investigators who wish to participate in GAW submit written contributions approximately 6-8 weeks before the Workshop. The GAW Advisory Committee reviews contributions for relevance to the GAW topics. Contributions are assembled and distributed to all participants approximately two weeks before the Workshop. Participation in the GAWs is limited to investigators who (1) submit results of their analyses for presentation at the Workshop, or (2) are data providers, invited speakers or discussants, or Workshop organizers.

GAWs are held just before the meetings of the American Society of Human Genetics or the International Genetic Epidemiology Society, at a meeting site nearby. We choose a location that will encourage interaction among participants and permit an intense period of concentrated work.

The proceedings of each GAW are published.

Attachment 2

(from see <http://www.faculty.umb.edu/pjt/4S06.html>)

There is long and politically charged history of scientific and policy debates about the heritability of IQ test scores and genetic explanations of the differences between the mean scores for racial groups. In a pair of papers, "Heterogeneity and heritability" (in the new science studies journal, *Biological Theory: Integrating Development, Evolution and Cognition*), Peter Taylor argues that, despite the attention given to these debates by researchers and other critical commentators, including science studies scholars, significant conceptual and methodological issues in quantitative and behavioral genetics have been overlooked or not well appreciated. In particular, when similar responses of different genetically defined types are observed, it should not be assumed that similar conjunctions of genetic or environmental factors have been involved in producing those responses. Allowing the homogeneity of factors to be questioned opens up many issues for the different fields in science studies, such as:

- * What happened historically when the methods quantitative genetics were being transferred from the context of agricultural and laboratory breeding to analysis of human variation which allowed the restrictive conditions that hold in the former context not to be seen as a significant problem?
- * What role has a 'racialized imaginary,' in particular, the treatment based on group membership of people who vary greatly within groups, played in the discounting of heterogeneity in quantitative analysis of traits, especially in explanations of differences among means of groups?
- * How can different meanings of heterogeneity be distinguished and their conceptual and methodological significance be clarified?
- * How have genes and IQ controversies been framed in relation to assumptions of homogeneity and questions of heterogeneity?

Attachment 3

(from coda to a manuscript under review)

Suppose we are interested in explaining the differences for some trait between individuals in two groups. We could assess statistically whether the difference between group means is greater than might be expected by “chance” (that is, greater than the spread of values within the groups), then hypothesize about the genetic and environmental factors (gfs and efs) related to the difference. Perhaps we might go on to hypothesize about the genetic and environmental factors related to the spread within the groups (figure 4). If the trait were height and group A and B were women and men, we would be explaining the difference between heights of male and female individuals first in terms of their membership in the group women or men, and then in terms of factors that position them higher or lower within their sex or gender. If the trait were IQ test score and the groups were African-Americans and Euro-Americans, we would be explaining the difference between the IQ test scores of African-American and Euro-American individuals in terms, first, of their membership in the racial group, and then in terms of factors that position them higher or lower within their racial group.

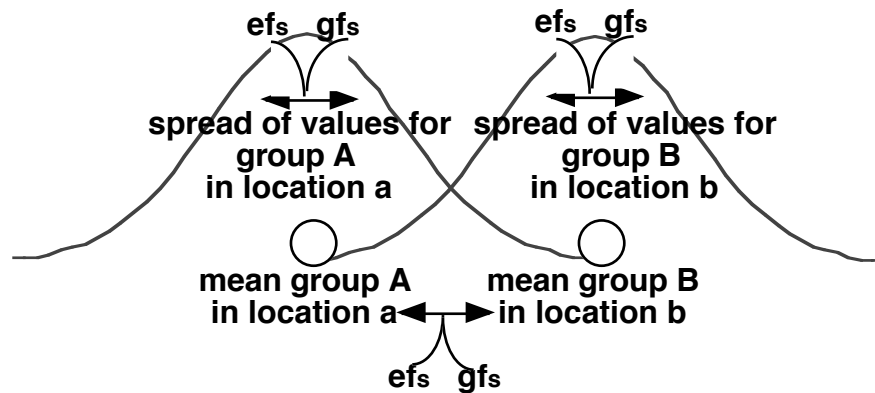


Figure 4. A typical picture of hypothesizing about the genetic and environmental factors (gfs and efs) underlying the variation in some trait within and between groups.

A different picture is possible. There may be many subsets of men who share more genetic and environmental factors influencing the development of their height with subsets of the women than they do with other men. In that case, our analysis might begin by noting the spread within the two groups and attempt to expose the heterogeneous combinations of factors underlying the trait for particular individuals (figure 5; see Taylor 2006b&c). This picture does not rule out the possibility that all the developmental pathways involve some physiological factors and social treatment that are common to individuals in each sex/gender group, but it does not begin by assuming that is the case, let alone that it is the dominant factor.

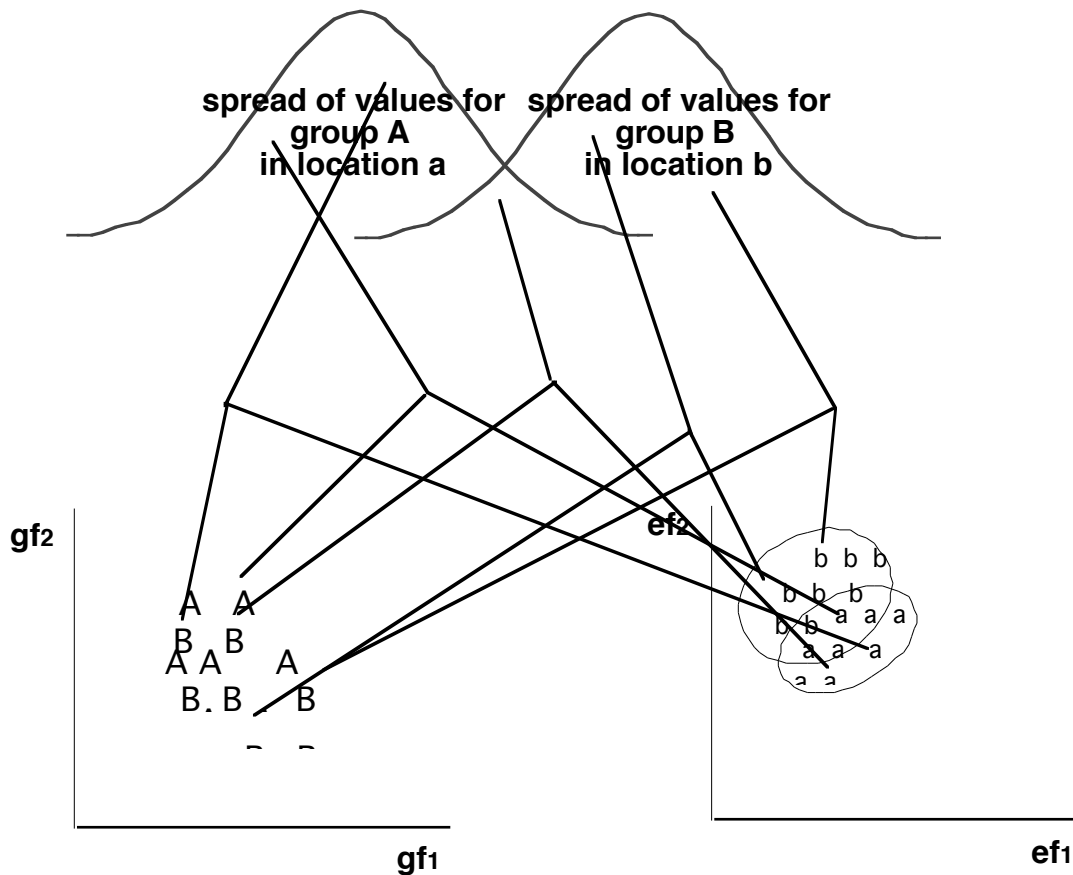


Figure 5. A non-typological picture of hypothesizing about the genetic and environmental factors (gfs and efs) underlying the variation in some trait that differs between groups.

The alternative picture may or may not turn out to be more fruitful in explaining the variation in heights of men and women. However, when explaining variation in IQ test scores, the contrast is of definite import. Racial stereotyping builds on the assumption that factors shared within racial groups predominate over the possibly heterogeneous combinations of factors underlying the IQ test score for individuals (Taylor 2006b&c). Ironically, by contributing to the routine treatment of individuals in U.S. society according to their racial group membership, this assumption may well generate some factors that are shared within each group. Indeed, the relationship of interpretation to change becomes quiet complex here. If we try to shift the focus from group membership to reconstructing heterogeneous pathways of development, we risk bolstering the fiction that racial group membership no longer brings social costs or benefits—or, at least, should not be used in policy as an indicator of whose development has been hindered/enhanced by those costs/benefits. New methods that explore alternatives to persistent typological thinking are needed, I believe, if we are to interpret this social and scientific complexity in ways that help us change it.

Taylor, P. J. 2006b & c. Heritability and heterogeneity.... Biological Theory: Integrating Development, Evolution and Cognition 1(2): 150-164 & 392-401.