**George MacKerron — Response to PhD Thesis Joint Final Report**

P30. There are two unsubstantiated statements the first about authors not generally reflecting on the wide range of terms employed under the SWB banner and secondly happiness being more widely used than wellbeing in the media reporting of SWB research.

OK…

P31. The student states that it is most common for economists to use data referring to “these days” or “nowadays” etc. Again the student needs to substantiate these statements by reference to the literature.

P33. The comment about naïve comparisons should be withdrawn.

P40. The student should formally rehearse the theoretical links between hedonic analysis and SWB research. This is because it is important to ensure that the subsequent empirical specifications are properly grounded in theory. In particular, if the labour market and housing market were in perfect equilibrium would it be possible to employ the SWB approach?

P41. Justify the comment that certain points are rarely highlighted in the literature.

P47. Including the log of income constrains the elasticity of marginal utility to be unity (not merely constant).

P56. It is surprising that the student did not mention climate as a source of wellbeing. There are lots of studies that suggest that climate impacts on happiness, perhaps more than any other environmental variable.

P57. Roback (1982) and not Moro et al (2008) is the classic reference on interurban hedonic analysis. The student should familiarise himself with her paper.

P60. The student wrote nothing on the Household Production Function approach as an explanation of why environmental quality promotes welfare. The idea is that households combine marketed and non-marketed environmental goods to produce service flows of relevance to the household. Living in an area with environmental amenities reduces the cost of producing these service flows. This idea is explained in most advanced environmental economics textbooks.

P68. The student should explain better what are the self and experience factor items of nature-relatedness.

P70. Comment on the consequences of the error in survey implementation.

P79. The student should add a footnote on the link between asthma and air pollution and comment on possibilities for investigating this link using data that he has collected.

P80. The student should display a much greater awareness of the problems of defining income and collecting survey data on income.

P120. When calculating temperature from the nearest weather station the student did not correct for the adiabatic lapse rate. He should explain whether or not this is a serious error and if so consider correcting this mistake.

P125. Equation 6.1 includes wages but wages have not been discussed. This reinforces the point about understanding the theoretical model upon which the model is based and understanding the link to hedonic theory.

P129. The student should not log the data in table 7.1. It is a moot point whether to drop variables because they are collinear. The student should reconsider his decision to drop collinear variables. The student should conduct a literature survey with the aim of identifying exactly which environmental variables have been used in existing interurban and hedonic and SWB studies. There appear to be some obvious omissions such as the quality of public services, climate, racial mix and locally undesirable land uses. This important point needs to be addressed especially in the light of comments contained in the conclusions and is likely to take some time. Obviously it will not be possible to include all the variables used in earlier studies. But it would at a minimum be important to know how comprehensive the research is compared to earlier analyses.

P137. It would be useful to see both standardised and unstandardised beta coefficients.

P138. The concept of equivalised household income is not discussed.

P139. In light of the problems with income the student should attempt to use instrumental variables or otherwise explain why this is impossible. What other papers have adopted such a strategy? The student should also check for geographical stability, perhaps by including a dummy variable for the different parts of the UK or by dividing the country in half along the North-South or East-West axis. The student should include latitude and longitude and explain why they are important (variation in hours of daylight and the depressing effect of getting up in the dark).

P140. Is there a difference between those who own their homes and those who do not (perhaps wealth is more important than annual income in determining happiness)?

P146. The student should explain the paragraph beginning “It might be objected…”

P150. Although the student talks about correcting the income coefficient he does not talk about the problems of transient income or measurement error, both of which could be corrected by instrumental variables. Once again if this obvious remedy is not possible then the student should explain why not. It appears that such a strategy has been undertaken in other published research so why is it not possible here?

P153. The student makes an odd remark about including lots of variables being akin to a fishing expedition. But is it a fishing expedition to include variables which others have already found to be potentially important in their empirical analyses? Once again this points to the need to know exactly what other people have included in their empirical hedonic and SWB analyses.

P170. Figure 8.10a strongly suggests that OLS is not the appropriate estimator. The student should re-estimate using a more appropriate estimator.

P175. The student should explain why noise levels aren’t included in the analysis. Does the weather matter only when people are outdoors?

P182. The student should include a nonlinear time trend to capture seasonal trends. This could be addressed by including sine waves at differing frequencies (Chebyshev polynomials). In particular a great deal has been written about seasonal affective disorder (none of which is included in the thesis but which surely must explain some of the variation in the data over time).

P188. Dropping the observations with the values 0 or 100 is not the appropriate remedy. This problem needs to be addressed using an estimator combining point and interval data e.g. INTREG in STATA.

P192. The student says that existing studies include only a narrow range of environmental quality characteristics. But we are not convinced that the student’s selection of environmental quality characteristics is not also narrow compared to other studies. The student might like to revisit that claim once he has conducted a more thorough literature review.

Professor David Maddison

Dr Francesca Cornaglia