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# Comment on Simone Sarti, 'A Different Perspective to Investigate Social Inequalities: the Relationship between Height and Education in Italy'

(doi: 10.2383/74858)

Sociologica (ISSN 1971-8853)

Fascicolo 2, maggio-agosto 2013

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## Comment on Simone Sarti

### A different perspective to investigate social inequalities: the relationship between height and education in Italy

*by* Bernard Harris

doi: 10.2383/74858

Dr Sarti's paper uses height as an indicator of socio-economic position. If the relationship between height and years of schooling changes, this implies that the relationship between socio-economic position and years of schooling has also changed. The results suggest that the education system has, in this sense at least, become more egalitarian.

I should like to focus my comments on three broad areas: first, the relationship between height and socio-economic conditions; second, the contribution of the paper to anthropometric history; and, third, the determinants of years of schooling.

#### **Height and socio-economic conditions**

As Dr Sarti has suggested, variations in height reflect the impact of both genetic and environmental influences. An individual who is poorly-nourished, either in the womb or during childhood, is likely to be shorter, other things being equal, than a well-nourished individual. An individual who grows up in a disease-ridden environment is also less likely to achieve their genetic potential. This is why growth monitoring plays such an important role in health screening and why variations in the average heights of different populations, or of different sub-groups within the same population, can reflect differences in economic and social conditions [Eveleth and Tanner 1990, 1]. However, as the impact of these factors diminishes, the effect of ge-

netic factors on individual height variations is likely to increase, and this implies that the value of height as a proxy for each individual's social class is also likely to change.

Although Dr Sarti acknowledges this point in the opening section of his paper, it might be interesting to explore its implications more fully. It seems to me that, in practice, the paper assumes that the relationship between height and social class has remained unchanged in order to use height as a vehicle for exploring the relationship between social class and years of schooling. However, if the relationship between height and social class has changed, one cannot necessarily conclude that a change in the relationship between height and years of schooling proves that education itself has become more egalitarian.

### **The anthropometric history of modern Italy**

Although the primary focus of the paper is on the relationship between height and education, it also makes an intriguing contribution to our knowledge of changes in the average height of the Italian population during the twentieth century. In particular, the paper uses self-reported height data from four successive ISTAT surveys to infer trends in the heights of both men and women who were born between 1934 and 1992. However, there are two possible problems with these statistics which might complicate the picture.

One of the issues raised by Dr Sarti's analysis concerns the attempt to infer longitudinal changes from cross-sectional data. As we have already seen, the data have been obtained from a series of surveys conducted between 1994 and 2010, and these data have then been rearranged by birth cohort in order to generate a picture of changes over time. The data are not broken down by age but the oldest subjects were aged 64 at the time their heights were surveyed. However, the majority of anthropometric historians have tended to discard data from individuals over the age of fifty when measuring changes over time in order to allow for the effects of shrinkage.<sup>1</sup> This may mean that the results for the earliest cohorts are less reliable than those for more recently-born individuals.<sup>2</sup>

Sarti's analysis also raises question about the use of self-reported data. As he says, this 'is an inevitable limit of the study' but it has implications for the analysis of changes over time as well as for the relationship between height and social class. He cites a Swedish study which shows that 'when using self-reported information of height [*sic.*], the socio-economic differences are likely to be underestimated'

<sup>1</sup> See e.g. Floud, Wachter and Gregory [1990,160-162].

<sup>2</sup> See also Fernihough and McGovern [2013].

[Boström and Diderichsen 1997, 864]. However, the same study also showed that ‘overestimation of height increased with age’ [*ibid.*, 862]. This may reflect the fact that individuals are not always aware that shrinkage has occurred [Galloway 1988].

It is interesting to speculate as to the impact of these factors on the trends reported in Figures 1 and 3 of Dr Sarti’s paper. Figure 1 reports results obtained from the measurement of successive cohorts of Italian males who were measured as part of the army recruitment process between the ages of 17 and 19. It suggests that the average heights of successive birth cohorts increased during the 1930s and early-1940s; this was followed by a decline in the heights of those born at the end of the Second World War and an acceleration in the rate of increase from the early-1950s onwards.<sup>3</sup> By contrast, Figure 3 shows ‘a substantially monotonic trend for both genders’ over the same period. From the point of view of constructing a long-term analysis, it would be interesting to know whether these differences are rooted in the composition of the samples or the methods used to analyse them.

### Years of schooling

The main contribution of this paper lies in the use of height as a proxy for social class and its introduction into debates about the relationship between education and equality. However, it also raises questions about the use of years of schooling as a proxy for educational attainment and the reasons why years of schooling might have increased. As a non-expert in both the history and the sociology of Italian education, I would have welcomed a more extended discussion of some of these points.

As Ballarino *et al.* [2009] have previously recognised, there are a number of reasons why educational provision might have expanded and why this should be associated with a reduction in class-based inequalities. In the first place, access to post-compulsory education is clearly related to the organisation of the compulsory education system. If this is already stratified along class lines, as appears to have been the case in Italy during the 1920s and 1930s, then access to post-compulsory education is also likely to reflect this. There are therefore good reasons for supposing that the liberalisation of the education system after the Second World War would help to encourage more egalitarian outcomes. The relationship between social class and years of schooling might also be affected by changes in the length of compulsory education. If the majority of working-class children were accustomed to leave school at the end of the compulsory period, any extension to that period might be expected to affect them disproportionately.

<sup>3</sup> See also Arcelini [2006].

The association between class and education is also likely to be influenced by the number of post-compulsory places, although the effects may be more mixed. If the majority of new places are taken up by children from 'élite' backgrounds, the initial phases of expansion may only serve to increase the extent of inequality, but the extent of inequality is likely to diminish as more places are taken up by less-advantaged groups. The attractiveness of these opportunities is also likely to reflect the nature and state of the labour market. Reductions in the demand for child labour reduce the opportunity costs of education for low-income families; improvements in the standard of living increase the affordability of additional years of education; and changes in the demand for unskilled labour increase the attractiveness of additional educational qualifications. However, although one needs to accumulate qualifications in order to progress from one stage of the education system to the next, 'years of schooling' is still an 'input' measure, and it would be useful to know how far the relationship between either height or social class and educational outcomes has also changed.

### **Concluding remarks**

Despite these questions, I very much welcome the introduction of height data into these debates, and there are a number of ways in which the issues raised by the paper might be taken further.

As I have already suggested, the paper raises some important questions about the relationship between height and social class, and it would be interesting to learn more about these. Unfortunately, we appear to possess very little information about the childhood circumstances of the individuals who participated in the ISTAT surveys. However, it would certainly be interesting to know whether the association between height and social class has declined in Italy, as has often been claimed in relation to other countries.<sup>4</sup>

The paper also raises an intriguing question about the relationship between height, years of education and gender. Figures 4 and 5 suggest that years of schooling have been much more sensitive to variations in the heights of males than females, and it would be interesting to know how far this might be related to labour market differences or to sex-specific differences in access to higher education.

One of the most controversial questions in the anthropometric literature concerns the relationship between height and cognitive development. As Catherine Gale [2005] has demonstrated, there is a longstanding tradition which relates height to IQ,

<sup>4</sup> See e.g. Li, Manor and Power [2004].

and some recent authors have claimed that some of the factors which inhibit physical growth, especially in early life, may also be associated with impaired cognition [Case and Paxson, 2008; 2009]. This might provide an additional (though not unrelated) explanation for some of the connections between height and years of schooling which Dr Sarti's paper investigates.

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## **Comment on Simone Sarti**

### A different perspective to investigate social inequalities: the relationship between height and education in Italy

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**Abstract:** This paper comments on Simone Sarti's study of the relationship between height and education in twentieth-century Italy. Sarti used information on the heights of men and women to explore the relationship between social status and years of schooling. The current paper focuses on three key aspects of this work. It begins by exploring the relationship between height and social class, and asks how this might have changed over the course of the period. It then examines Sarti's contribution to our understanding of the anthropometric history of Italy during the twentieth century. The third section discusses the impact of changes in Italian education policy on the question of educational equality. The paper concludes by offering some additional suggestions for further work in this field.

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*Keywords:* Height, education, schooling, social class, Italy

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