

Answer to Peter E. Earl

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We are most grateful for the comments made by Earl (2014) on our paper, Frey and Gallus (2014). In particular, we are pleased that we can fully agree on the fundamental point we wanted to make: decisions by individuals (as well as by organizational units) do not map directly and in an unchanged way to the macro level. Rather, the aggregation process linking the micro- and the macro-level must be explicitly considered. Actions at the micro-level may be suppressed, left untouched, or even strengthened by the aggregation process.

This may be illustrated by a concrete example. An intervention on subliminal priming (Karremans, Stroebe, and Claus 2006) showed that split-second stimuli to drink Lipton Ice tea induced thirsty participants to actually consume more Lipton Ice tea after the experiment, at the expense of alternative and more habitual refreshers (Verwijmeren et al. 2011). People did not realize that they had been shown split-second messages. Together with a range of other experiments, for example on the effect of music on people's consumption choices in restaurants (North, Shilcock, and Hargreaves 2003) and shops (Areni and Kim 1993), these results suggest that people can be induced to act in a particular way without even being aware of it (Stroebe 2012 offers an encompassing discussion of past research on subliminal priming).

However, such experimental results should not simply be transferred to the macro-level. Indeed, it is most unlikely that the micro-level effect will persist at the aggregate level. Competitors will soon realize that Lipton is selling more drinks for instance to thirsty filmgoers. They will quickly also intervene by using split-second ads. The aggregate outcome at the market level will then be unchanged despite the well-founded experimental results at the micro-level.

In our paper we endeavoured to illustrate the importance of the aggregation process by analysing how psychological anomalies (defined as deviations from rationality in economics) may be transformed depending on whether the aggregation is taking place by market processes, democracy, hierarchy, bargaining, tradition, or chance (for the latter, see Zeitoun, Osterloh, and Frey 2013). In contrast to what Peter Earl suggests, we do not think that rational choice is the only way to analyse the aggregation process. A different theoretical approach may well yield interesting insights into how the aggregation process operates.

Our emphasis lies on studying the rules of the game, i.e., the constitutional level (Buchanan 1977, Buchanan and Tullock 1962, Mueller 1996). We want to know more about which of the socio-economic aggregation mechanisms is used in which situation, and to what effect. For instance, when does the market aggregate individual decisions (as in the case of the split-second advertisement), and when is the process dictated by bureaucratic rules (for instance that split-second advertising is prohibited,

as was done as a reaction to the public discontent in the UK, Australia, and by the National Association of Broadcasters in the United States (Stroebe 2012).

These issues are wide open and should be further pursued. More fundamentally, experimental results derived from micro-level decisions should not simply be used to draw inferences for the societal level.

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