Response

Response to Comments by Balzano and Swicord on "Neurophysiological Effects of Mobile Phone Electromagnetic Fields on Humans: A Comprehensive Review"

Giuseppe Curcio* and Elia Valentini

Dipartimento di Psicologia, "Sapienza" Universita di Roma, Roma, Italy

Drs. Balzano and Swicord criticize our conclusive remarks as not logically deducible by the uncertain premises provided in the review [Valentini et al., 2007]. On the contrary, we believe we have formal grounds to claim that MP-like EMF can transiently and reversibly influence normal physiology. Indeed, within the 33 papers examined (16 single-blind and 17 double-blind) we observed a majority of positive findings: 9 with effects versus 7 null for the single-blind, and 13 with effects versus 4 null effects for the double-blind. Drs. Balzano and Swicord neglected this part of the manuscript which describes satisfactory support to our conclusions. More complete (i.e., quantitative) information might be provided only by a meta-analysis of single-measure effect sizes, with a straightforward comparison of experimental power among different studies.

Drs. Balzano and Swicord also observe that our conclusions were not supported by independent replication: actually, a couple of laboratories did not replicate their own original positive findings when adopting a more robust methodology [Krause et al., 2004; Hamblin et al., 2006]. We fully agree that the issue of replication is crucial and we hope to see it become a priority objective in this field. However, lack of replication cannot be taken as proof of a lack of biological effects, just as the absence of independent replication for negative effects would not be evidence for the existence of biological effects. To increase the methodological strength of studies in this field, it would be useful to complement the Fisher test of statistical significance with the P-replicability index (*Prep*) [Killeen, 2005], an alternative to nullhypothesis significance testing which addresses the probability to replicate the direction of an original effect.

Finally, Drs. Balzano and Swicord quote the following theoretical statement: "...Following these considerations, then, the human head can serve as a

resonator for electromagnetic radiation...". Such a statement was erroneously interpreted as our own thesis. Instead, the hypothesis is that of Weinberger and Richter [2002] and was simply considered in the manuscript to feed the discussion about possible biological effects on the human brain.

When dealing with public health, "extraordinary" effects need careful attention, even if observed only in a few individuals. Open discussion among researchers in this field is invaluable, and we are grateful to Drs. Balzano and Swicord for their competent contribution.

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*Correspondence to: Giuseppe Curcio, Dipartimento di Psicologia, "Sapienza" Universita di Roma, Via dei Marsi 78, I-00185 Roma, Italy. E-mail: giuseppe.curcio@uniroma1.it

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