

- Kopczyński W., Trautman A., (1981), *Czasoprzestrzeń i grawitacja*, Warszawa, PWN.
- Leibniz G.W., (1969) „Polemika z Clarke’iem”, [w:] G.W. Leibniz, *Wyznanie wiary filozofa*, przeł. S. Cichowicz, PWN, Warszawa.
- Newton I., (2011), *Matematyczne zasady filozofii przyrody*, J. przeł. Wawrzycki, Kraków, Copernicus Center Press.
- Pabjan T., (2011), *Eksperymentalna metafizyka. Johna S. Bella filozofia mechaniki kwantowej*, Kraków, Copernicus Center Press.
- Pauli W., (1921), *Relativitätstheorie*, Berlin, B.G. Teubner.
- Penrose R., (2006), *Droga do rzeczywistości*, przeł. J. Przystawa, Warszawa, Prószyński i S-ka.
- Popper K.R., (1977), *Logika odkrycia naukowego*, przeł. J. Kmita, Warszawa, PWN.
- Popper K.R., (1999), *Droga do wiedzy: domysły i refutacje*, przeł. S. Amsterdamski, Warszawa, PWN.
- Shimony A., (1984), „Contextual hidden-variables theories and Bell’s inequalities”, *British Journal for the Philosophy of Science* 35.
- Shimony A., (2013), “Bell’s Theorem”, *The Stanford Encyclopedia of Philosophy* (Winter 2013 Edition), [ed.] Zalta E.N., <http://plato.stanford.edu/archives/win2013/entries/bell-theorem/> [dostęp: 1.09.2014].
- Wawrzycki J., (2011) „Wstęp”, [w:] I. Newton, *Matematyczne zasady filozofii przyrody*, przeł. Wawrzycki J., Kraków, Copernicus Center Press.
- Zahar E., (1983), „The Popper-Lakatos controversy in the light of «Die beiden Grundprobleme der Erkenntnistheorie»”, *British Journal for the Philosophy of Science* 34.

Physics and magic: on action at a distance

ABSTRACT. According to a widespread opinion, quantum theory reintroduces into physics the notion of action at a distance, which was formerly eliminated from this scientific discipline by the theory of relativity. What is more, it is claimed that this feature of quantum mechanics must be shared with any future sub-quantum theory. This claim is supported by Bell’s theorem, which in turn rests on Bell’s locality condition. Next, this condition may be reduced to two other conditions, i.e. of parameter independence and of outcome independence. It is argued that while the former is an uncontroversial consequence of locality, the latter is not only unsupported, but also unlikely to be imposed on any future theory that would be more deterministic than quantum theory.

KEY WORDS: action at a distance, quantum correlations, entanglement, Bell’s theorem, outcome independence

Jan Czerniawski, Instytut Filozofii UJ, ul. Grodzka 52, 31-044 Kraków, uczerni@cyf-kr.edu.pl