Artificial intelligence, machine learning, and other demons

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Editorial

Artificial Intelligence, Machine Learning, and Other Demons

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Readers will likely note the reference in the title of our editorial to the seminal and well-known novel of Gabriel García Márquez. This framing is intentional – on the one hand, because the novel is one of the very best examples of magical realism, and on the other hand, it also deals with exorcism. These are both themes for our discussion of artificial intelligence and machine learning and their (prospective) roles in the field of psychological assessment.

Artificial intelligence and machine learning have become prominent buzz-words over recent years and, at the same time, are just as heavily infused with the hopes and dreams that are so typical of magical thinking as they are infused with the suspension of disbelief that is also a typical trait of human imagination. In fact, many lay people's ideas of artificial intelligence are not far removed from what early science fiction writers such as Jules Verne or Isaac Asimov imagined.

This may be explicable from a historical point of view because developments in artificial intelligence were influenced by the hard sciences (e.g., engineering and electronics) and the humanities, such as philosophy or fiction, and pure unbridled human imagination. This heritage of magical and wishful thinking lingers on in the domain: sometimes, those who use the words do not understand the current capabilities of the various algorithms and procedures that are subsumed under the umbrella term "artificial intelligence." And the same holds for the limitations associated with these methods.

One of the main goals of artificial intelligence and machine learning is prediction. In the field of psychological assessment, numerous personality questionnaires and other tests are already in use, and it is sometimes argued that the user experience would be much better if the tedious work of developing and filling out such a traditional tool could be avoided. This is probably one of the reasons why artificial intelligence and machine learning techniques appear, at first glance, to be so attractive for the field of psychological assessment. However, despite all the euphoria, we should not forget that the basic principles applied to evaluate the quality of an assessment tool must also apply to scores derived from algorithms: evidence of objectivity, reliability, and validity. Consequently, it has long been our intention to try to exorcise some of the magical thinking that surrounds artificial intelligence and its applications in psychological assessment; or, to use less flowery language, to take a critical look into this fascinating and "hip" world of novel algorithms and computational approaches, and to compare it with the brave old world of regression-based techniques that we have come to love and live with over the last decades.

An invitation went out to the *EJPA* team, with the challenge to provide a critical review of these matters. Our colleague Marjolein Fokkema has taken up the challenge to lead this review, and so this issue of our journal features the invited paper on "Machine learning and assessment" that was developed under her leadership (Fokkema et al., 2022).

This invited paper on these novel techniques expresses strong opinions, but it is also meant to serve as a starting point to open up a discussion of the topic of artificial intelligence and machine learning and its application to psychological assessment. We would like to see *EJPA* as an outlet for this type of work and so warmly invite papers that showcase the applications of these and other similar techniques to psychological assessment, paying attention to objectivity, reliability, and validity evidence. These are likely ways in which our domain will progress and *EJPA* wishes to offer a home to debate and development in this field, while upholding established principles of quality assurance.

Reference

Fokkema, M., Iliescu, D., Greiff, S., & Ziegler, M. (2022). Machine learning and prediction in psychological assessment: Some promises and pitfalls. *European Journal of Psychological Assessment, 38*(3), 165–175. https://doi.org/10.1027/1015-5759/a000714

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