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EDITORIAL

Artificial Intelligence and Psychology

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Artificial intelligence (AI) and psychology are two seemingly different fields, but their convergence has generated fertile ground for innovation and development. Authors such as John McCarthy (McCarthy, 1955), considered one of the pioneers of AI, and Marvin Minsky (Minsky, 1968), have highlighted the intersection of these domains, anticipating the profound impact that technology will have on human psychology.

John McCarthy's 1955 proposal for the Dartmouth summer research project on artificial intelligence marked the beginning of the systematic study of artificial intelligence, and his conclusions paved the way for the development of algorithms and fundamental concepts in AI. Marvin Minsky's work on semantic information processing highlighted the importance of mental modeling and neural networks in artificial intelligence. Sherry Turkle (2011) investigated how human relationships are influenced and transformed by the use of technology and robots in social interactions, highlighting the social and psychological impact of human-computer interaction, showing both the benefits and risks associated with the use of technology in interpersonal relationships, and emphasizing the need for a balanced approach in this regard.

AI has made significant progress in recent decades, enabling the development of applications that mimic human cognitive functions (LeCun et al., 2015). Using machine learning models and neural networks, technology has made a significant contribution to fields such as medical diagnosis, voice assistance, or even interventions for mental health (Orrù et al., 2020).

For example, various studies have highlighted how virtual reality and AI can be integrated to provide innovative therapies for post-traumatic stress disorders and anxiety

(Lobel & Beidel, 2015; Rizzo et al., 2019). Other studies (Nass & Brave, 2005; Turkle, 2011) have explored how robots and virtual assistants can serve as emotional support, demonstrating the ability of artificial entities to create emotional bonds with humans and to serve as companions for those who are lonely or socially isolated.

As AI becomes increasingly sophisticated, its potential to assist and complement human psychological processes becomes increasingly evident (Yuste et al., 2017).

The role of artificial intelligence in improving therapeutic interventions for children

In recent decades, artificial intelligence (AI) has captured the attention of the scientific community for its potential to improve therapeutic interventions, especially regarding the mental health of children, ranging from the use of virtual reality for treating anxiety disorders to technology-assisted assistance in therapy for children with autism.

The benefits of using artificial intelligence in therapy include: 1. Personalized interventions: the use of machine learning algorithms allows for the adaptation of therapeutic interventions to the specific needs of each child (Rizzo et al., 2019). By analyzing data and behavior, AI can provide therapists with detailed information for customizing treatment; 2. Technology-assisted therapies: Virtual reality and interactive technology provide innovative tools for treating mental disorders in children (Lobel & Beidel, 2015). Technology-assisted therapies can be more engaging and attractive to children, facilitating progress in therapy; 3. Augmentation of therapist capabilities: AI can assist therapists in evaluating and analyzing data, providing additional support in decision-making processes and monitoring patient progress (Orrù et al., 2020).

Albert Rizzo and his colleagues have demonstrated the effectiveness of virtual reality in treating post-traumatic stress disorders in children (Rizzo et al., 2019). The results showed a reduction in symptoms and an improvement in the quality of life for children involved in technology-assisted therapy.

Other authors have conducted studies on the effectiveness of technology-assisted therapy in managing anxiety in children with autism spectrum disorders (Lobel & Beidel, 2015). The results showed a significant reduction in symptoms and an improvement of social skills in these children.

The use of artificial intelligence in therapy for children can be an efficient way to improve their mental health, as it combines knowledge from both fields to create personalized and effective therapies for children.

Ethical dilemmas in the use of artificial intelligence in applied psychology

The integration of artificial intelligence (AI) into the field of applied psychology has brought significant benefits, but has also raised complex ethical dilemmas. The development of AI technologies for diagnosis, therapy, and psychological data analysis has raised concerns regarding confidentiality, fairness, and the impact on the therapeutic relationship.

The use of AI in the collection and analysis of psychological data raises concerns about the confidentiality and security of personal information (Barocas & Selbst, 2016), as the protection of patient data and the avoidance of the risk of identification must be considered. The presence of bias in algorithms, which can perpetuate discrimination or social inequalities, is another major ethical concern (Angwin et al., 2016). Additionally, the use of AI can influence the therapeutic relationship between therapist and patient (Davenport & Kalakota, 2019), and the quality and intimacy of the therapeutic relationship may be affected.

Therefore, a balanced approach and clear regulations are necessary to ensure both real benefits and patient protection (Floridi et al., 2018). Interdisciplinary collaboration between professionals in the fields of psychology and technology is essential for developing ethical guidelines and ensuring responsible practice in this field.

Limitations and challenges of artificial intelligence in applied psychology

Despite significant progress, there are certain challenges and constraints that must be considered for an

effective and ethical integration of artificial intelligence (AI) into psychological practice.

One of the greatest challenges is the limited ability of AI to understand and adapt to the complexity of the human context (Davenport & Kalakota, 2019). The lack of ability to interpret emotional subtleties and to flexibly respond to varied situations is a significant limitation in the therapeutic process.

While AI can simulate human behaviors to some extent, the lack of empathy and intuition remains a major limitation (Floridi et al., 2018). Subtle human abilities, such as reading non-verbal cues or adapting to individual needs, are difficult to replicate in an authentic manner.

Psychologists bring to therapy skills such as empathy, intuition, and the ability to establish deep human connections (Gilovich et al., 2015). These aspects are essential in facilitating the healing and personal transformation process in therapy. In this context, AI can be considered a complementary partner to psychologists (Duan & Xia, 2020). Technology can provide tools and support for data analysis, progress monitoring, and even for facilitating access to mental health services.

The accuracy and precision of diagnosis are essential in applied psychology, and AI may encounter difficulties in obtaining precise diagnoses (Duan & Xia, 2020). There is a risk that algorithms may misinterpret certain signals or provide inaccurate diagnoses due to the lack of context and detailed information.

Moreover, AI applications in psychology require constant human supervision to ensure that the decisions and recommendations of the algorithms are correct and ethical (Floridi et al., 2018). The lack of human involvement can lead to unintended consequences or misinterpretations of algorithmic results.

The adoption and implementation of AI technology in clinical practice require significant resources and may face resistance from mental health professionals (Duan & Xia, 2020). At the same time, integrating technology in a way that brings real benefits to patients and therapists requires time and adaptation.

All these limitations should not be seen as insurmountable obstacles, but as aspects that require careful approaches and clear regulations (Jobin et al., 2019). A balanced approach between technology and human intervention can bring significant benefits to psychological practice.

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