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A NEW FRONTIER: EXPLORING THE IMPACT OF ARTIFICIAL INTELLIGENCE ON COUNSELING TECHNIQUES IN FOUR LEVELS OF IMPLEMENTATION

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Abstract

In recent years, integrating artificial intelligence (AI) in various fields has revolutionised processes. One such field that has seen significant interest and development is counselling. This dissertation delves into the novel frontier of exploring the impact of AI on counselling techniques. By leveraging AI technologies, counsellors and mental health professionals have enhanced patient care, personalised treatment plans, and overall outcomes. This abstract provides a comprehensive overview of this paper's key themes and findings. The research work examines how AI-powered tools such as chatbots, machine learning algorithms, and natural language processing are utilised within counselling practices. These technologies have enabled counsellors to provide round-the-clock support, gather real-time data on patient progress, and tailor interventions based on individual needs. Furthermore, the ethical considerations and potential challenges associated with integrating AI into counselling are also addressed. This paper also illuminate the opportunities and limitations of AI in counselling through case studies, literature reviews, and expert interviews. By critically evaluating AI's impact on traditional counselling techniques, this research seeks to contribute to the ongoing dialogue surrounding the intersection of technology and mental health care. Many public, academic, and therapeutic domains embrace Artificial Intelligence (AI). AI applications are growing, and the counselling profession is one area where it is becoming increasingly prevalent. A brief history of psychological AI is given, along with definitions of AI and related subfields. Four stages of counselling implementation are suggested, which match influence and temporal orientation. AI affects public policy, clinical practice, existential ethics, and counselling ethics.

Keywords: Integration, Counseling, Counselor, Artificial Intelligence, Researchers, Technology

Introduction

It is anticipated that artificial intelligence (AI) will have a significant impact on future mental health services (Luxton, 2014, 2016). Numerous scholars and thinkers believe AI will have a significant impact on how life on Earth develops in the existential future (Barrat, 2015; Bostrom, 2014; Kurzweil, 2014; Müller, 2016), with particular ramifications for occupations and careers (Ross, 2017). In his final years, physicist Stephen Hawking talked about how AI might spell the end for humanity. He emphasised the need for safety measures, such as increasing public knowledge of AI development's risks, difficulties, and short- and long-term effects (Hawking, Russell, Tegmark, & Wilczek, 2014). To guarantee that advances in AI benefit society, a coalition comprising some of the biggest corporations in the world was founded in 2016. A collaboration encouraging transdisciplinary inclusivity in AI and its societal impact, the "Partnership on Artificial Intelligence To Benefit People and Society" was founded by Amazon, Apple, Deep Mind, Google, Facebook, IBM, and Microsoft (Gaggioli, 2017a). In order to talk about AI's present and potential roles in society, this collaboration intends to bring together activists and specialists from various disciplines, including psychology. In order to address AI as a societal revolution with consequences across all disciplines, efforts are being made. Since the psychological sciences have been essential to AI development since its official founding, it makes sense for the technology developers to consult with mental health experts (Frankish & Ramsey, 2014).

For a while now (Illovsky, 1994; Sharf, 1985), counsellors have predicted that artificial intelligence will permeate their field. However, the advent of artificial neural networks and gains in computer processing power and natural language processing capability have recently led to a new generation of AI capabilities (Hirschberg & Manning, 2015; Kurzweil, 2006; Russell & Norvig, 2003). These developments have raised awareness of AI. As to the Artificial Intelligence Index (2017) Annual Report, artificial intelligence has become a prominent topic in worldwide discussions, attracting the interest of practitioners, industry leaders, politicians, and the general public (p. 5). The study of AI is developing quite quickly. Even specialists find it challenging to comprehend and follow advancements in the industry, according to the AI Index Annual Report (p. 5). AI applications for healthcare professionals have already aided clinical decision-making, assessment, training, and treatment (Hamet & Tremblay, 2017; Luxton, 2014). AI has developed into a broad, multidisciplinary discipline where counselling and AI frequently collide. This article's analysis of AI advancements in fields related to clinical counselling is one of its goals.

Due in large part to the difficulty in defining intelligence in the first place, the true nature of artificial intelligence remains a mystery (Gardner, 2017; Monnier, 2015). I will define and review key terms and concepts related to AI before reviewing current implementations and potential future effects on the counselling field. After that, I will go into AI's history, development, and prospects related to counselling. In conclusion, I will present four meta-levels of AI application to the counselling profession: historical, present, possible in the near

future, and conceivable in the long run. AI's use, convenience, and impact on counselling are demonstrated at every theoretical level.

The definition and justification of artificial intelligence

Establishing trustworthy terminology is the first step towards comprehending how AI has affected and will continue to affect the counselling profession. When we dissect the term, we must define "artificial" and "intelligence." Artificial suggests that anything is synthetic or human-designed, as opposed to naturally occurring. AI is "artificial" in terms of computers, electronics, or mechanics. The definition and measurement of intelligence as a variable, along with its implications, have been the subject of extensive discussion in the literature (Cherniss, Extein, Goleman, & Weissberg, 2006; Davies, 2002; Fagan, 2000; Schroeder, 2017; Sternberg, 1985). According to Legge and Hutter (2007), there is considerable ambiguity within the AI community.

According to Goleman (2005) and Gardner (2006), intelligence is believed to possess various extensions and to transcend beyond a purely cognitive domain into the emotional sphere. According to artificial intelligence expert Max Tegmark (2017), intelligence is the "ability to accomplish complex goals," which provides a helpful summary of the various definitions of intelligence (p. 39). I then define artificial intelligence (AI) as the capacity of non-biological systems to achieve objectives. Since intelligence is not a binary concept, simple and complex goals can be achieved, but the qualifier "complex" is removed from Tegmark's formulation. Both basic and advanced forms of intelligence are numerically different but lie at various places on a continuum within the same category. AI is comparable to the human brain's operating system. As Hassabis, Kumaran, Summerfield, and Botvinick (2017) and Lecun, Bengio, and Hinton (2015) note, a significant amount of current AI research has been influenced by neurology. A computer screen avatar or a robot are two examples of how AI might be embodied.

Learning from machines and algorithms

Grand philosophical issues related to ontological and epistemological issues are brought up by artificial intelligence (Copeland, 1998). As the AI subfield of machine learning illustrates, however, AI starts within the domain of the small and exact, needing formal logic and mathematics. An AI must be able to learn in order to advance to the stage where it can operate as a counsellor. Learning machines differ fundamentally from their conventional counterparts. The ability to exercise control is a significant area of difference. When a human builds a standard machine, that person still controls it. Even in cases where accidents involving machinery occur (such as car accidents), the agency of the vehicle is not to blame. Accidents do not happen because an automobile makes a poor decision; human mistakes in navigation, buildings, or bad weather are the culprits.

On the other hand, a machine that gains knowledge via experience can be endowed with traits and capabilities that its human creators were unaware of. A prime example is the computer

program AlphaGo, created to play the board game Go (Gibney, 2016). Playing countless games against human opponents and other computers, AlphaGo gained experience and eventually became so good that it defeated world champion Lee Sedol four games to one in 2016. The AlphaGo creators were unsure about the move that would be used next in the match against Sedol. Their best estimate would be off if one of the programmers triumphed over the world champion. Given that Go is a game that demands not just rote memory but also strategy and insight, AlphaGo's win is regarded as a turning point in the history of machine learning. Even in a limited way, AlphaGo demonstrated autonomy by acting without human input. Still, this machine learning example shows that "smart" machines can operate tactically more proficiently than humans and respond in unexpected ways.

There are many questions for the counselling profession regarding machine learning, especially as it may still be in its early stages of development (Arel, Rose, & Karnowski, 2010). If counsellors-in-training could learn from their mistakes and advance to independent practice, and an AI possesses the same skill set but acquires knowledge much faster, what potential effects might autonomous AIs have on the field? Counselling is an intuitive and strategic process, just like Go. Would a sophisticated AI acting in the role of a counsellor make decisions that even seasoned counsellors would find dubious but that end up being beneficial? Algorithms, the fundamental building blocks of machine learning, will be responsible if AI ever develops to the point where it can effectively provide counselling services. A set of logic-driven instructions outlining the proper way to complete a task culminates in a computer program defeating a world champion Go player or, possibly, an AI using a counselling strategy. Although Pedro Domingos (2015) offers a fundamental definition of an algorithm as “a sequence of instructions telling a computer what to do,” the concept of an algorithm does not lend itself well to a rigorous definition (Gurevich, 2012). Algorithms are procedures similar to textual messages that can therapeutically inform and provide a conversational voice to the AI. Artificial intelligence (AI) is a significant science; machine learning is a subfield.

The path to therapeutic intervention

Math professor John McCarthy coined the phrase "artificial intelligence" in 1956 while assisting with planning a summer conference at Dartmouth College concerning the possibility of creating sentient robots (Copeland, 1998). McCarthy (McCarthy, Minsky, Rochester, & Shannon, 2006) proposed the fundamental idea behind AI research: if an intelligence attribute, like learning, could be precisely characterised and dissected into its component elements, a machine might be programmed to mimic it. Discovering how to make robots use language was the goal of the conference attendees (for a full discussion, see McCarthy et al., 20The first gathering of AI and counselling was held at that conference, regarded as one of the major milestones in AI history. Counsellors work in the communication industry in numerous ways and rely on various media, including written, spoken, nonverbal, art, and music therapy. Those researchers in artificial intelligence set out to find out how to make robots communicate in 1956. Ten years after the Dartmouth meeting, the first chatterbot to

converse like a human counsellor was created. Chatterbots are computer programs that mimic human interaction, often called virtual agents or chatbots (Deryugina, 2010). Finalised in 1966, Eliza was the first bot (Weizenbaum, 1966). Eliza was well-known for her ability to respond to inquiries with more questions and was created to resemble a Rogerian therapist (Mauldin, 1994). Communication-capable devices have cognitive abilities comparable to that of a machine. Chatbots now mimic intelligent conversation rather than thinking (Abdul-Kader & Woods, 2015; Mauldin, 1994; Warwick & Shah, 2014).

Counsellors may be interested in the metaphysics of AI indirectly, but Alan Turing, one of the pioneers of AI, raised a pertinent point. How well can a machine mimic human conversation? This is the scientific study topic Turing (1950) has put out. Paradoxically, the question pushed the discussion further into subjectivity and scientific evidence. The Turing test pits a computer system against the subjective perception of humans. Known as "The Imitation Game," the test requires human subjects to communicate with an unidentified entity via text (Saygin, Cicekli, & Akman, 2000). Either a human or a computer program might be typing. For the computer program to fail, the participant must guess that he or she is speaking with a computer. The program passes if the participant is persuaded by the computer's convincing imitation of human speech. When evaluating counselling implementation, ethics, working conditions, and accessibility in a field that mainly relies on human communication, the Turing test may be crucial. For many, perception is reality. Counselors would do well to monitor how the general public views psychological AI. After doing this, counsellors may conclude that utilising psychological AI in addition to conventional counselling could benefit clients and the industry. Chatbots such as Eliza have been mimicking counselling skills in a minor way for some time now. Even counsellors may not agree. Counsellors should take notice if and when the public perceives psychological AI as equivalent to counselling.

Four levels of implementation in counselling

According to Kaplan, Tarvydas, and Gladding (2014), p. 366, the American Counseling Association (ACA) defines counselling as "a professional relationship that empowers diverse individuals, families, and groups to accomplish mental health, wellness, education, and career goals." The three components of counselling that make up the definition are (a) developing a professional connection, (b) empowering, and (c) achieving goals. All three pillars must be met in order to provide counselling. On the other hand, an AI approaches the counsellor status, if not quite there, if it satisfies one or both conditions. When two of the three conditions are satisfied, an AI that can assist a person in reaching a wellness objective, for instance, is operating in part as a counsellor. If artificial intelligence becomes more prevalent in counselling, we should anticipate that AI will be able to perform the same tasks as counsellors, if not more so.

Predicated on the idea that AI has been and will remain relevant in counselling, I outline four stages of implementation: historical, present, close to future, and distant. The stages relate to temporal orientation, impact on the counselling industry, and the ACA-approved definition of counselling to assist in navigating an AI-infused environment. While

the historical first level demonstrates AI's limited prior involvement in counselling, the final level, which is still pending, is distinguished by AI demonstrating a very sophisticated and influential level of involvement in the subject.

Level 1: Historical

In the past, AI applications in counselling did not create a professional rapport and most likely did not significantly increase or decrease people's ability to achieve their objectives. In the past, counsellors have not utilised artificial intelligence very much. The two fields are not connected, somewhat indirectly so. The initial level of interaction featured chatbots exhibiting basic uses of natural language processing (NLP). This AI discipline focuses on comprehending and simulating human conversation (Tanana, Hallgren, Imel, Atkins, & Srikumar, 2016). When evaluating statistical probabilities of word sequences, inflexion, and semantics in sizable natural language samples, sophisticated models may now be applied via potent computer-generated statistical processors, marking a significant advancement in natural language processing (Tanana et al., 2016). Due to these advancements, therapeutic AI systems have been created, where AIs are trained to mimic mental health patients, for example. These initiatives deserve more study since, despite their flaws, they do demonstrate some therapeutic efficacy (Dalfonso et al., 2017; Luxton, 2014).

Level 2: Contemporary

Although they probably do not create a professional rapport or provide clients with any degree of empowerment, modern AI counselling applications probably help them achieve their objectives. Research-backed applications of AI-assisted counselling characterise level two. There are two main types of modern implementations. One method is text-based bots such as Woebot, a text-based agent that utilises Cognitive Behavioral Therapy (CBT) to teach users CBT self-help skills through dialogue-like exchanges. According to Fitzpatrick, Darcy, and Vierhile (2017), Woebot has been demonstrated to help young adults with their anxiety and depressive symptoms. Another illustration is Tess, a psychological AI with conversational, informational, and CBT-like techniques employed within an integrative theoretical framework. According to research, Tess's AI-generated dialogues can help college students feel less depressed and anxious by offering real-world treatments (Fulmer, Joerin, Gentile, Lakerink, & Rauws, 2018). Virtual reality is the second method. Ellie uses emotional computing and virtual reality and is called a "virtual human interviewer" (Gaggioli, 2017b). Virtually appearing on a screen as a human, Ellie can read a client's facial expressions, voice intonations, and verbal responses (Darcy, Louie, & Roberts, 2016). Ellie is essentially the pinnacle of current therapeutic AI applications. Ellie's aptitude for evaluation is noteworthy, as her ability to recognise distress indicators may be helpful in the diagnosis and management of anxiety and depression as well as Posttraumatic Stress Disorder (PTSD) (DeVault et al., 2014).

The counselling theory used in modern AI implementations is behavioural therapy (CBT). There is a shift in communication from only text-based to visual and aural domains, along with AI-based evaluations, which could increase the accuracy of diagnoses (DeVault et al., 2014; Hahn, Nierenberg, & Whitfield-Gabrieli, 2016). Research is improving data sensors, natural language processing, and general machine learning by using more complex models to compute communicative and behavioural input and output. It also continues to clarify the mechanisms underlying human sensory and perception systems and learning paradigms so that these mechanisms can be implemented in computers. When combined with studies demonstrating the therapeutic benefits of AI, AI could become more prevalent in counselling in the future. The possibilities for the future are shown in levels three and four.

Level 3: ***The far future of the medium, or the emergence of artificial general intelligence***

The advent of artificial general intelligence (AGI) characterises level three. AIs with this skill level can establish business ties with clients. An AGI could also empower and assist customers in reaching their objectives. Artificial intelligence nowadays is called narrow intelligence because of its singular purpose—psychoeducation, for example. By comparison, an artificial general intelligence (AGI) would be more adaptable, capable of accomplishing a wide range of tasks, and even better than a person (Yampolskiy & Fox, 2012). Since AGI has not yet been achieved, experts disagree on when it will occur; some believe it will happen in a few decades, while others believe it will take a century or more (Tegmark, 2017). As such, level two, the level before, might cover a long time.

Second and third-level AI applications for counselling differ significantly from one another. Generally speaking, computers learn far faster than people. With the development of an AI designed just for counselling, the field's whole body of knowledge would be wholly and quickly learned. "AGI Counselors" would raise ethical, legal, and philosophical issues due to their advanced skill set and capacity to see a broad spectrum of clients. One of the main concerns will be whether the AGI Counselor is creating a professional relationship with all the obligations and safeguards. This may seem unlikely to counsellors in the field. However, there has already been a great deal of discussion in the literature regarding the moral rights of conscious robots, including the definition of consciousness, the moral obligations associated with it, and the possibility of developing AIs that can represent a range of evaluative perspectives (Gerdes, 2016; Lin, Abney, & Bekey, 2014; MacDorman & Kahn, 2007; Malle, 2015; Santos-Lang, 2015; Tavani (2018); Allen & Wallach (2010)).

A growing number of studies indicate that AI can be a good counsellor—sometimes better than human counsellors—but there may be a divide between proponents of AI taking over and replacing human counsellors. Fear of losing one's work to automation and artificial intelligence is becoming more widespread (Kaplan, 2015; Ross, 2017). Counsellors who believe that their AGI counterparts have the same degree of empathy and communication abilities as them could potentially experience the same amount of anxiety. Applying AI at

level three in counselling will completely transform the field. Counsellors might be beyond humans for the first time.

Level 4: The superintelligence era

"Superintelligence" is the hallmark of level four artificial intelligence. An AI of this level could quickly fulfil all three counselling criteria: goal completion, relationship, and empowerment, in addition to other potentially more beneficial and successful criteria that humans have not yet determined. The concept of superintelligence, first put forth by philosopher Nick Bostrom in 2014, describes a high-level AI significantly more intelligent than humans. When AGI develops to the point where it can achieve tasks that are beyond the capabilities of humans, it is said to have reached superintelligence. The current level of proficiency of such an AI is incomprehensible. Some believe the arrival of high-level intelligence will begin the next phase of human evolution (Reese, 2018), while others fear it will negatively affect humanity (Bostrom, 2014). Still, others think these worries are unwarranted (Agar, 2016).

Superintelligence's era is still up in the air. However, after surveying theorists and researchers working on AI technology, Müller and Bostrom (2016) and the Future of Humanity Institute at Oxford University discovered:

Table 1. Impact of AI level implementation on pillars of the counselling process.

		Level 1: Historical	*Level 2: Contemporary*	*Level 3: Artificial General Intelligence*	*Level 4: Superintelligence*
Pillar of Counseling	*Professional relationship*	No	No	Central ethical question	Yes
	Empowers	Likely no	Unknown	Yes	Yes
	Helps accomplish goals	Likely no	Likely yes	Yes	Yes

> According to the respondents, there is a one-in-two possibility that high-level machine intelligence will be established by 2040–2050, and by 2075, there is a nine-in-two likelihood. Experts predict that in less than 30 years, systems will advance to superintelligence. According to their estimates, there is a one-in-three probability that this evolution will prove to be "bad" or "extremely bad" for humanity on page 555.

Counselling as a profession and culture as a whole will change if and when such changes occur.

Summary

With each adoption stage, artificial intelligence becomes increasingly ingrained in counselling (see Table 1). While there was some minimal AI use in the counselling area in the past, there has been a resurgence of AI in the present. Future AI research is inevitable, given that the United States, China, and the European Commission are investing billions of dollars to support these initiatives (Cath, Wachter, Mittelstadt, Taddeo, & Floridi, 2018; Kelly, 2018; Larson, 2018). It remains to be seen if the research boom results in stages three and four.

Discussion

This paper aims to provide a theoretical overview of AI in counselling, define and clarify key AI concepts, and explore the relationship between AI and clinical counselling. A presentation of four implementation metalevels was made. Level one pertains to historical implementations, while level four concerns future implementations that will impact humanity long-term. The levels correspond to temporal orientation. While I accept some uncertainty about the future, AI predictions based on present research can be somewhat accurate, much as climate scientists can predict that global warming will make the planet hotter (Hulme, 2016).

Counselling already interacts with artificial intelligence. If current trends continue, AI's development rate will lie somewhere between sequential and exponential, determining how much they intertwine in the future. An AI that could only ask simple questions one day could, for example, learn sophisticated diagnosis, assessment, and how to embody the relational, emotional, cognitive, and ethical qualities of expert therapists almost instantly with exponential growth (Jennings, Sovereign, Bottorff, Mussell, & Vye, 2005; Skovholt & Jennings, 2004). Although rapid expansion is conceivable, exponential growth is not guaranteed (Pratt, 2015; Kurzweil, 2006, for a technical explanation of how this might occur).

AI and high-tech applications in counselling are expected to remain prevalent. Even at this level, these applications raise several practical and ethical concerns about when and how to

use AI in counselling, whether or not it can completely replace a human counsellor, how it might impact someone looking for a human connection through counselling, whether or not data generated by AI use can be stored in a way that makes it unhackable, and whether or not counsellors and clients with AI are sufficiently trained and knowledgeable about AI practices.

Few works that discuss AI from a descriptive, correlative, or experimental basis are currently in the counselling literature. More studies may be needed to guide therapeutic practice if medical professionals use AI-assisted supplements to support their patients—like the psychological AI Tess. If the ACA needs to confront AI at the level of public policy, research could also help shape thought leadership. Research on counselling ethics is arguably most urgently needed.

Research must concentrate on how AI counselling services might avoid unfavourable side effects, oversimplified conclusions, and potentially hazardous strategy and technique development. Green's (2018) summary of ethical issues surrounding AI should guide this work. Additionally, care needs to be taken to guarantee AI functional transparency or that people creating, producing, deploying, and engaging with AI systems can comprehend the system's behaviours. Data security and privacy procedures are a further ethical concern when using AI services. Lastly, studies should aim to determine the degree to which clients and counsellors must be knowledgeable about AI technology and its use to guarantee practice fairness, beneficence, and non-maleficence, as well as the safety and wellness of both parties (Green, 2018).

The counselling community needs more research to understand how AI services could affect persons seeking out human relationships because they feel ignored, unnoticed, and undeserving of other people's attention. There may be various unanswered existential problems in counselling and other professions when interactions transition from human to human-like. These existential questions may demand more consideration and planning from academics and professionals specialising in human emotion and crisis, such as counsellors, given the wave of induced unemployment, socioeconomic inequality, increasing technological dependency, and human de-skilling (Green, 2018). The power and influence that AI offers can be exploited. When ethical issues arise, research helps the profession be ready to handle them.

Further investigation is required about psychological artificial intelligence. The topic is relatively unexplored; hence, there is not much research on it. Of particular notice is the lack of literature regarding ethical implications. With its taxonomy and suggested implementation levels, this paper closes a theoretical study gap and establishes a framework for future research. For instance, a clinical ethical challenge at level one will not appear the same at level four. The advantages and limits of theoretical components are inherent. Benefits include offering constitutive definitions to direct further research and high-level context to frame AI

applications and field influence. One drawback of an abstract, categorical offering is its lack of specificity and clinical examples.

Furthermore, no single piece can adequately convey the breadth and significance of artificial intelligence (AI), as it is growing into a massive multidisciplinary area with weekly or even daily advancements. Research has to focus on two important but unknown areas: evaluating how AI affects a varied clientele in clinical counselling and devising strategies to stop prejudice and discrimination from infiltrating AI. A rising body of research is required to keep up with the expanding convergence of AI and counselling.

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