A NEW FRONTIER IN ONLINE DISPUTE RESOLUTION: COMBINING AI AND MINDFULNESS

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ABSTRACT

The use of artificial intelligence (AI) in dispute resolution has gained attention due to its potential to streamline the resolution process and reduce costs. The purpose of this paper is to explore the integration of AI with alternative dispute resolution (ADR) processes and propose an online dispute resolution (ODR) model that combines elements of mindfulness and different forms of AI.

The paper begins by providing an overview of the history of ODR and introducing Lodder and Zeleznikow's three-step ODR model. It then explores the role of AI in dispute resolution and provides a brief history of AI generally.

The comparison of two major ODR tools that leverage AI technology follows, leading to a discussion on mindfulness and its relevance to mediation. Finally, the paper presents a novel ODR tool that combines AI and mindfulness, leveraging the benefits of both to provide more effective and empathetic mediation services to disputants.

The proposed ODR model is based on a hybrid approach that combines different forms of AI with mindfulness, such as non-judgmental awareness and compassionate communication. The model involves the use of chatbots for initial communication, machine learning algorithms for case evaluation and recommendation, and a decision-making system based on mindfulness and principles for resolving disputes. The proposed ODR model has the potential to provide a fair, efficient, and cost-effective dispute resolution process. However, further research is needed to assess its effectiveness and acceptance by users.

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I. ONLINE DISPUTE RESOLUTION

Parties using out-of-court methods, known as alternate dispute resolution ("ADR"), to settle legal claims is not a novel concept.[2] Online dispute resolution ("ODR") first emerged in the 1990s as a reaction to conflicts that arose due to the growth of eCommerce, but it was not until 2000 that ODR was widely used for conflicts that were not internet based.[3] In 2005, Lodder and Zeleznikow developed a three-step model for ODR based on AI research involving rule-based reasoning, game theory, machine learning, and more.[4] Because Lodder and Zeleznikow's model is comprehensive and sound, we will be using it as a base to build our own ODR system. The scholars laid out the steps of their proposed model:

1. The ODR tool should provide feedback on the likely outcome(s) of the dispute if the negotiation were to fail, in essence to give advice on respective BATNAs.
2. The ODR tool should then attempt to resolve any existing conflicts using argumentation or dialogue techniques.
3. For those issues not resolved in step two, the ODR tool should employ decision analysis techniques and compensation/trade-off strategies so as to facilitate resolution of the dispute.
4. If the result from step three is not acceptable to the parties, the ODR tool should allow the parties to return to step two and repeat the process recursively until either the dispute is satisfactorily resolved, or a stalemate occurs.[5]

Today, ODR is the most rapidly expansive sector of ADR because it can be used in versatile ways, especially in situations where offline dispute resolution does not work. In scenarios where parties cannot meet face-to-face due to logistics, such as international business cases, parties can use online dispute resolution tools.[6] Moreover, when citizens of many countries were forced into lockdown after the COVID-19 pandemic emerged, online

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[2] Todd B. Carver & Albert A. Vondra, *Alternative Dispute Resolution: Why It Doesn't Work and Why It Does*, HARVARD BUS. REV., May-June 1994, at 1.

[3] Ethan Katsh & Colin Rule, *What We Know and Need to Know About Online Dispute Resolution*, 67 S.C. L. REV. 329, 336 (2016); *see also* John Zeleznikow, *Using Artificial Intelligence to Provide Intelligent Dispute Resolution Support*, GROUP DECISION NEG. 790, 801 (2021).

[4] Zeleznikow, *supra* note 3, at 804.

[5] A.R. Lodder & John Zeleznikow, *Developing an Online Dispute Resolution Environment: Dialogue Tools and Negotiation Support Systems in a Three-Step Model*, 10 HARVARD NEG. L. REV. 287, 325 (2005).

[6] LANGUAGE CONNECTIONS, *Translation in Online Dispute Resolution*, BLOG (July 23, 2020), https://www.languageconnections.com/blog/translation-in-online-dispute-resolution/ [https://perma.cc/9ZQ6-APKS]

tools and remote work became essential for society to function. Thus, properly functioning ODR tools can help us in many scenarios.

While ODR first began as a digitized version of ADR, its very nature began transforming once it was put online.[7] ODR still contains some of the very same aspects as its offline counterpart, but its goal is no longer to be merely more efficient or convenient. As technology grows, it opens up a whole new world for ODR in terms of usage and benefits. With the recent unprecedented growth of AI, we are now able to conjure new and creative processes within ODR for parties to reach a common resolution.

As ODR use became widespread, the process has entailed adding another party, the "Fourth Party," to the common ADR model using a third-party neutral such as an arbitrator or mediator.[8] The Fourth Party is the technology that can either replace the human third-party neutral by helping parties reach agreements or supplement the mediator through abilities such as evaluating, identifying, organizing, clarifying, caucusing, calculating, etc.[9] These abilities are embedded within advanced software whose growth shows no sign of halting any time soon. With AI, the Fourth Party is quite easy to imagine and treat as a separate entity, especially since its abilities to supplement or replace the third-party neutral will only proliferate over time.

Arbitration and litigation are ways to settle a dispute in which a third party controls the outcome, but these processes can remove control and responsibility from the disputants.[10] For this reason, an ODR tool that focuses solely on mediation is the better option.

II. ARTIFICIAL INTELLIGENCE

This paper will not delve into the controversies surrounding the potentially dangerous risks of AI itself but will instead explore the possibilities of leveraging AI systems in ODR. It will discuss current AI systems but will not speculate on AI breakthroughs expected to occur in the future. Some pitfalls of AI will be discussed, but Terminator-like doomsday scenarios of AI[11] are outside of the scope of this paper. Moreover, rather than proposing a

[7] Katsh & Rule, *supra* note 2, at 330.

[8] *Id.* at 331.

[9] *Id.*

[10] Emilia Bellucci & John Zeleznikow, *Developing Negotiation Decision Support Systems that Support Mediators: A Case Study of the Family Winner System*, 13 A.I. L. 233, 237 (2006).

[11] Steven Greenhut, *As AI advances, when will the Terminators Arrive?*, ORANGE CNTY. REG. (Jan. 29, 2023), https://www.ocregister.com/2023/01/29/as-ai-advances-when-will-the-terminators-arrive/ [https://perma.cc/RFC2-5LKQ].

humanoid neutral third party, this paper argues for an online dispute resolution tool that encompasses helpful AI tools, such as software available on a platform that offers software as a service (SaaS).[12]

In 1955, John McCarthy, commonly regarded as the "father of AI," first coined the term "Artificial Intelligence."[13] Today, the Oxford English Dictionary defines artificial intelligence as "the capacity of computers or other machines to exhibit or simulate intelligent behavior."[14]

In 1950, Alan Turing, a highly acclaimed computer scientist and mathematician, introduced a new experiment to assess machine intelligence.[15] The experiment aimed to determine whether a machine could think and make decisions rationally and intelligently as comparable to a human being.[16] During the experiment, an interrogator had to determine which response belonged to a human and which belonged to a machine. If the interrogator could not differentiate between the two, the machine would pass the test of being indistinguishable from a human being. Hence, the Turing Test was created.[17] In 2005, Lodder and Zeleznikow argued that AI "involves the study of automated human intelligence, including the practice of building computer systems to perform intelligent tasks and conducting research on how to represent knowledge in a computer comprehensible form."[18]

There are two interrelated aspects of artificial intelligence: the physical hardware and the software's cognitive abilities.[19] A device can either exhibit intelligent behavior based on

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[12] SALESFORCE, *What is SaaS*, https://www.salesforce.com/in/saas/ [https://perma.cc/PTN3-CZUH] (last visited Apr. 25, 2023). SaaS platforms deliver applications over the Internet through the cloud, eliminating the need to install and manage software on-site. The service provider takes care of ensuring secure, reliable, and efficient access to the application.

[13] Nidhi Singh, *The Timeline of Artificial Intelligence – From the 1940s*, VERLOOP.IO (Nov. 7, 2022), https://verloop.io/blog/the-timeline-of-artificial-intelligence-from-the-1940s/ [https://perma.cc/3CP2-P5Q8].

[14] *Artificial Intelligence*, OXFORD ENG. DICTIONARY (1955) https://www.oed.com/search/dictionary/?scope=Entries&q=artificial%20intelligence [https://perma.cc/65DX-MQQB] (last visited Feb. 25, 2024).

[15] Singh, *supra* note 13.

[16] *Id.*

[17] *Id.*

[18] Zeleznikow, *supra* note 3, at 792.

[19] David Allen Larson, *Artificial Intelligence: Robots, Avatars and the Demise of the Human Mediator*, 25 OHIO STATE J. DISP. RESOL. 105, 107 (2010).

pre-programmed or human-driven instructions, or it can possess genuine intelligence that allows it to act independently without any external input.[20]

Language recognition is a type of artificial intelligence that emulates a crucial aspect of human learning.[21] For an intelligent device to respond appropriately, it must first understand what the user is saying. To this end, various interactive intelligent software employ a language processing system that functions similar to internet search engines.[22] In the same family lies "machine learning," a branch of AI that focuses on using data to train AI models to imitate human learning by remembering earlier inputs and thereby improving its accuracy over time.[23]

One of the major breakthroughs in the development of AI was the victory of Deep Blue over a chess world champion in 1997. In the 21st century, IBM's Watson, Roomba, Amazon's Alexa, and Amper the AI are major AI tools and are used ubiquitously.[24]

The most recent breakthrough, of course, is OpenAI's ChatGPT-4, released on March 14th, 2023.[25] GPT-4 is an enhanced iteration of OpenAI's expansive language model.[26] It was developed utilizing massive quantities of online information to generate intricate replies to user queries.[27] As of April 6, 2023, its commercial API is only accessible through a waitlist, but it has already been incorporated into certain third-party products, such as Microsoft's recently launched Bing search engine that utilizes AI technology and is available to the public in a limited form through ChatGPT Plus.[28] GPT-4 possesses stunning abilities, such as passing the Uniform Bar Exam and scoring in the 90th

[20] *Id.* at 108.

[21] *Id.* at 141.

[22] *Id.* at 142. Both GPT and Watson use language recognition to interpret the input they receive from users.

[23] IBM, *What is Machine Learning* (last visited April 25, 2023), https://www.ibm.com/topics/machine-learning [perma.cc/H62L-BJNJ].

[24] Ayyagari, *supra* note 12.

[25] *See* Alan Truly, *GPT-4: How To Use, New Features, Availability, and More*, DIGITALTRENDS (April 6, 2023), https://www.digitaltrends.com/computing/chatgpt-4-everything-we-know-so-far/ [perma.cc/ENK7-YNLA].

[26] Samantha Murphy Kelly, *5 Jaw-Dropping Things GPT-4 Can Do that ChatGpt Couldn't*, CNN BUS. (March 16, 2023), https://www.cnn.com/2023/03/16/tech/gpt-4-use-cases/index.html [perma.cc/JV4A-Y4LMV].

[27] *Id.*

[28] Truly, *supra* note 24.

percentile, among others.[29] Still, OpenAI has warned that users should exercise great caution while using it as there is still much to be improved upon.[30]

Rather than being a robot out of WestWorld,[31] artificial intelligence in the dispute resolution context may only ever need to exist as software.[32] While the software would need to have the basic structures in place, such as machine learning and language recognition, it may not need to imitate human movement, appearance, or cognitive processes if it is intended to simply supplement or replace a mediator.[33]

III. ONLINE DISPUTE RESOLUTION AND NEGOTIATION TOOLS

This paper will first introduce a brief history of ODR tools and then compare two major ODR systems using AI: Smartsettle and Family_Winner. In their article about the role of AI in ODR, Lodder and Thiessen compare these two major negotiation systems.[34] This paper will follow in their footsteps but will propose a fresh ODR system that incorporates elements from each, as well as novel approaches, with the aim of achieving a resolution that is both mindful and effective. The proposed ODR system will be infused with mindfulness principles to promote greater self-awareness and better communication between disputing parties.

In the 1990s, eBay gained massive success but did not have a way to resolve problems on the website. To gain user trust, ODR experts helped eBay and companies of the like create platforms that could resolve disputes online. Eventually, eBay was resolving over 60 million disputes per year through ODR.[35] In 1996, Brams and Taylor utilized game theory and decision theory techniques to create the Adjusted Winner algorithm, which used a two-party point allocation system to distribute items to disputants based on their individual valuations.[36] The Adjusted Winner algorithm became the foundation of Bullicci

[29] *Id.*

[30] *Id.*

[31] LINGUISTIC FACTORY, *Westworld: Artificial Intelligence with a Conscience?* (Nov. 16, 2021), https://linguisticfactory.ai/blog/en/where-is-the-line-that-separates-robots-from-humans/ [perma.cc/B9QW-FFBP].

[32] Larson, *supra* note 18, at 106.

[33] *Id.* at 112.

[34] A.R. Lodder & Ernest Thiessen, *The Role of Artificial Intelligence in Online Dispute Resolution*, PROCEEDINGS OF THE UNECE FORUM ON ODR 1 (2003).

[35] Erika Rickard, *Online Dispute Resolution Moves from E-Commerce to the Courts*, PEW (June 4, 2019), https://www.pewtrusts.org/en/research-and-analysis/articles/2019/06/04/online-dispute-resolution-moves-from-e-commerce-to-the-courts [https://perma.cc/MUW7-8A59].

[36] Zeleznikow, *supra* note 5, at 795.

and Zeleznikow's Family_Winner system.[37] In 1998, Thiessen et al. introduced the Interactive Computer-Assisted Negotiation Support system (ICANS) designed to facilitate the negotiation process for opposing parties and a professional mediator.[38] By helping all parties identify feasible alternatives, ICANS aids negotiations. This work eventually led to the creation of the Smartsettle system.[39]

Smartsettle is an advanced negotiation tool capable of assisting multiple decision makers, who have opposing goals, to resolve complex issues.[40] It is currently used in Canada to help resolve environmental disputes, first nations disputes, and family and estate disputes.[41] For inexperienced users, Smartsettle provides a skilled online facilitator to guide them through the process of expressing the parties' preferences for multiple negotiation variables.[42] By utilizing mathematical equations to model preferred outcomes, Smartsettle employs standard mixed-integer programming techniques to generate solutions that are both equitable and optimal, based on the parties' preferences.[43] Smartsettle offers five distinct products, available to the general public: "Smartsettle One for monetary issues," "Smartsettle Modeller for negotiation analysis," "Smartsettle Infinity for sophisticated negotiations," "Smartsettle Auction for buyers and sellers," and "Smartsettle SAAS for algorithmic power."[44]

The company advertises Smartsettle ONE as mainly used for "two-party formal negotiations" involving a "single numerical issue."[45] ONE utilizes five algorithms, including "Visual Blind Bidding" and "Reward Early Effort," described in detail below, which "motivate the parties to collaborate and virtually eliminate the tedious dance that characterizes ordinary negotiations" and allows anyone to first practice against a robot.[46]

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[37] *Id.*
[38] *Id.*
[39] *Id.*
[40] *Id.*
[41] *Id.*
[42] Lodder & Thiessen, *supra* note 34, at 5.
[43] *Id.*
[44] *Smartsettle Products,* SMARTSETTLE, https://www.smartsettle.com/products [https://perma.cc/P588-QRPK] (last visited April 25, 2023).
[45] *Smartsettle ONE,* SMARTSETTLE, https://www.smartsettle.com/smartsettle-one [https://perma.cc/BU6M-N7WG] (last visited April 25, 2023).
[46] *Id.*

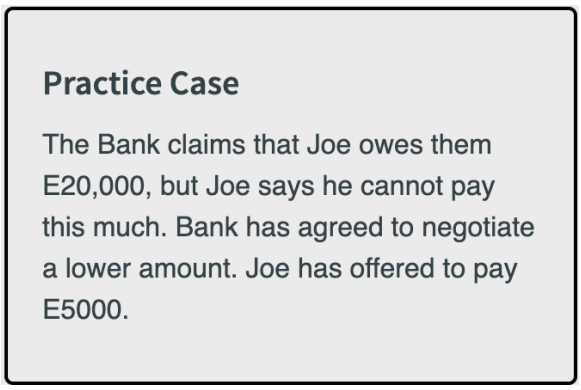

Figure 1. An example of a prompt when practicing against a robot.[47]

There is an option to insert your private notes.[48] The simulation against the robot starts with both parties entering a bid that is visible to all and if that bid does not match, each party must enter a bid that is only visible to the party themselves.[49] If the secret bid does not match, each party has the option to move to the next stage of negotiation or to end the negotiation entirely.[50] However, if the secret bid matches, that bid then becomes the final agreed upon number.[51] Additionally, there is an option to add a "Walkaway" value, as well as two chat boxes, one allowing the user to chat with the opposing party and the other allowing the user to chat with a "mentor," the collaborative robot.[52]

Each party's preferences are expressed using satisfaction functions for negotiation variables, which the parties have identified.[53] These variables can be issues shared between parties or private variables that are connected to shared variables through private constraints set by the parties, allowing the same level of confidentiality as traditional mediation if the parties do decide to keep the variables private.[54] Moreover, "the importance of particular outcomes to each party for the various variables is defined with

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[47] *Log-In Page,* SMARTSETTLE, https://go.smartsettle.com/cases/3386/negotiation [https://perma.cc/Z3ZB-8CR7] (last visited April 25, 2023) (Each practice case against a robot has its own distinct case).

[48] *Case Number 3908—Quick Practice,* SMARTSETTLE, https://go.smartsettle.com/cases/3908/document_uploads [https://perma.cc/QQM8-PUH3] (Last Visited Mar. 3, 2024).

[49] *See Quick Practice,* SMARTSETTLE, https://go.smartsettle.com/cases/3908/negotiation [https://perma.cc/WJ9D-NWVX].

[50] *Id.*

[51] *See Quick Practice,* SMARTSETTLE, https://go.smartsettle.com/cases/3908/negotiation [https://perma.cc/2KDF-NSHS].

[52] *Quick Practice, supra* note 49.

[53] Lodder & Thiessen, *supra* note 41 at 5.

[54] *Id.*; *see also* Maya Venkiteswaran, *Artificial Intelligence in Mediation*, ODR LATINO AMERICA (July 7, 2021).

reference to private bargaining ranges."[55] Smartsettle also allows decision makers to adjust the tradeoffs implicitly defined in satisfaction functions.[56] Negotiators can modify all aspects of user preferences at any time during the negotiation process since party preferences often change during negotiations.[57]

According to the Smartsettle website, Smartsettle utilizes a neutral internet server that functions as an impartial, intelligent, and trustworthy automated mediator, capable of comprehending how each party can attain satisfaction.[58] The server employs optimization algorithms that propose effective outcomes.[59] Smartsettle deems these algorithms akin to a recipe used by the neutral mediator who gathers the parties' ingredients and provides them with something desirable in return.[60] The Smartsettle process can occur either online or through hybrid interactions, depending on the parties' individual preferences.[61]

To start the SmartSettle process, the parties collaborate on creating a Framework for Agreement ("FFA").[62] To create an FFA, the parties identify an optimistic outcome in a comprehensive proposal. The negotiators must have training, practice in the field, and good communication skills.[63] The next step is for parties to specify their private preferences within the bargaining ranges established during the FFA process, which allows them to use the SmartSettle graphical interface for exchanging proposals and working towards a tentative solution.[64]

[55] Lodder & Thiessen, *supra* note 42 at 5.
[56] *Id.*
[57] *Id.*
[58] Ernest Thiessen, *Rewarding Good Negotiating Behaviour,* SMARTSETTLE (last updated Oct. 17, 2022), https://www.smartsettle.com/algorithms [https://perma.cc/DB2F-HJBN].
[59] *Id.*
[60] *Id.*
[61] *Id.*
[62] Lodder & Thiessen, *supra* note 42, at 6.
[63] *Id.*
[64] *Id.*

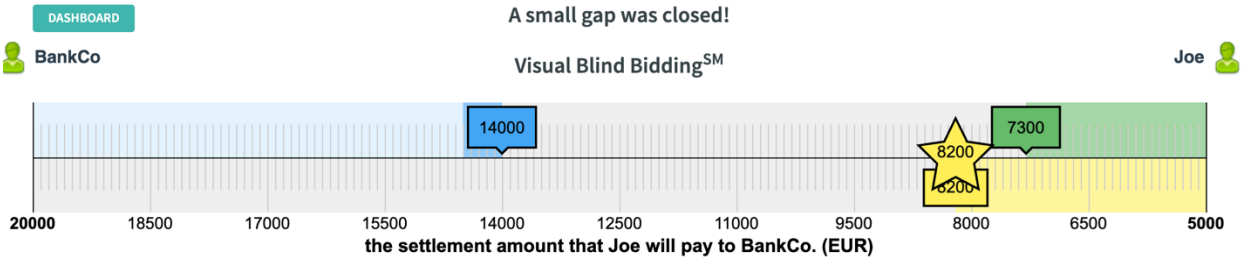

Figure 2. The visual blind bidding process is shown in a practice run against a robot. The first session starts with visible proposals (in blue). The system can then give Suggestions (not shown). In subsequent sessions, parties can offer concessions or adjust any visible gaps. Once either party feels that they have made a final offer, they can start the "Final Session." The system declares an agreement when there is an overlap of secret bids at the end of a session or if the gap is small enough to trigger the Small Gap Closer (shown in the banner at the top).[65] Smartsettle declares an agreement when the last moves made by the parties overlap to create a Zone of Agreement (shown as the yellow star). The yellow bars shows the secret moves made by each party in each session.

Negotiators have various methods available to reach a solution through SmartSettle. The first approach involves the traditional method of exchanging proposals, which are packages containing decisions on all defined variables.[66] Alternatively, negotiators can use the "Suggestions" feature which uses multivariate blind bidding to generate proposals for them.[67] Notably, Smartsettle's method of blind bidding is different from traditional blind bidding because in traditional blind bidding, each party's proposals are blind. But in Smartsettle's method, the acceptance of a value or package is secret only until the parties reach an agreement, as shown in Figure 2.[68] Negotiators can also use the "Reflections" feature, which allows them to propose single numbers based on the other party's preferences, streamlining the decision-making process and facilitating agreement.[69]

Users are more likely to reach outcomes closer to the efficiency frontier when they accept a package generated by SmartSettle through one of its negotiations features. However, if there is an impasse, negotiators can ask SmartSettle to generate an "Equivalent" package

[65] Thiessen, *supra* note 58.
[66] Lodder & Thiessen, *supra* note 42, at 6.
[67] *Id.*
[68] Thiessen, *supra* note 58.
[69] Lodder & Thiessen, *supra* note 42, at 6.

that gives each party at least as much satisfaction as they require.[70] Finally, SmartSettle divides any remaining value fairly among the parties using an algorithm called "maximize the minimum gain."[71] If parties are satisfied with the best solution the system found, then they fill in the FFA to produce a final agreement.[72]

Table 1: Smartsettle Rewards for Good Negotiating Behaviour

Objective	Behaviour	Reward
Fairness	Acceptance of a fair outcome	A timely win-win outcome
	Early movement to Zone of Agreement	Bigger portion of the overlap
	Agreement to Expert Neutral Decider	Guaranteed agreement
Efficiency	Secure Honesty & Truthfulness	Uncovered hidden value
Peace	Collaboration	Improved relationships

Figure 3. According to SmartSettle, Table 1 shows how SmartSettle incentivizes good negotiating behavior.[73]

SmartSettle allows parties to make secret bids on packages.[74] When a Zone of Agreement is reached, the party who made the smaller last move is given a larger portion of the overlap, which rewards good faith behavior.[75] If both parties agree to use the Expert Neutral Decider in the Final Session, an agreement is likely to be reached without the need for outside intervention.[76] The Expert Neutral Decider feature can be activated if no deal is reached. Three Expert Neutrals are then consulted to determine a fair value and the RCB algorithm is used to favor the party closest to fair, resulting in increased settlement rates due to the presence of the Expert Neutral Decider.[77] If parties use Smartsettle Infinity, they can still return to SmartSettle after reaching a settlement to see if any hidden value remains.[78] Smartsettle deems Infinity to be the "world's most advanced negotiation system" with the ability to support an infinite number of quantitative and qualitative issues between any number of parties, asynchronous and

[70] *Id.*
[71] *Id.*
[72] *Id.*
[73] Thiessen, *supra* note 58.
[74] *Id.*
[75] *Id.*
[76] *See id.*
[77] *Id.*
[78] *Id.*

synchronously, from and to "anywhere on Earth."[79] The other Smartsettle systems have a variety of algorithms and functions available to them, depending on the purpose and tier parties would like to use.

In 2005, Bellucci and Zelenznikow created another negotiation system, Family_Winner, which uses both game theory and heuristics to help negotiations.[80] While originally developed to extend research on negotiations in Australian Family Law, the system can be used not only to negotiate family disputes but to negotiate any dispute, from labor relations to neighborhood conflicts, according to the creators.[81] The system introduced importance values that represent the level of desire each party has towards the issue being considered, which are then used to create trade-off rules to allocate issues based on a logrolling strategy.[82] Essentially, Family_Winner gave advice to opposing parties on how to best negotiate trade-offs. By transforming user input into trade-off values, the system could display the effect of an issue's allocation on all unallocated issues via "trade-off maps."[83] If the parties can resolve an issue in its current form, the system allocates the issue accordingly.[84] Otherwise, the system prompts the user to decompose the issue chosen by the system as the "least contentious."[85] The decomposition process continues until the users cannot break down the issues any further.[86] The system then calculates which issue to allocate to which party, removes it from the respective trade-off maps, and adjusts the remaining issues linked to the allocated issue accordingly.[87]

One advantage of SmartSettle over Family_Winner is that it is easier to use. Novices typically cannot use the Family_Winner system to its full capacity without the help of a facilitator due to its complexity, depending on their training and experience. In contrast,

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[79] *Smartsettle Infinity*, SMARTSETTLE, https://www.smartsettle.com/smartsettle-infinity [https://perma.cc/3DDY-GDAA] (last visited Apr. 25, 2023).

[80] Lodder & Thiessen, *supra* note 42, at 6.

[81] *See* John Zeleznikow, *Family Winner*, YOUTUBE (Oct. 1, 2010), https://www.youtube.com/watch?v=YOZczuvrou4&ab_channel=JohnZeleznikow [https://perma.cc/HF98-XE5D] (showing how Family_Winner works).

[82] Lodder & Thiessen, *supra* note 42, at 6. *See also* Mark Lindquist, *How to Leverage the Logrolling Negotiation Technique to Accelerate Sales Deals*, MAILSHAKE (Nov. 28, 2018), https://mailshake.com/blog/logrolling-negotiating-technique/#:~:text=You%20can%20think%20of%20logrolling,the%20cards%20on%20the%20table [https://perma.cc/6LZ4-DUAZ] (explaining logrolling strategy).

[83] Lodder & Thiessen, *supra* note 42, at 6–7.

[84] *Id.* at 7.

[85] *Id.*

[86] *Id.*

[87] *Id.*

Smartsettle's allocation algorithm is relatively simple, and negotiators can use the system without much training. A commonality between the two is that they both provide advanced support to negotiate any issue.[88] Smartsettle also has an experienced team to assist with any problem.[89] Moreover, the parties begin by identifying the issues, which are used to decide a set of decision variables to be negotiated. A major difference between the two systems is that SmartSettle is a multi-party system, whereas Family_Winner is designed for two-party disputes. However, both systems use numerical algorithms to determine the relative importance of each issue. Furthermore, SmartSettle utilizes a blind-bidding system that generates packages representing bundles of variables, while Family_Winner uses a method that solves issues one by one in order of their importance. Lastly, a limitation of both systems is the absence of support for resolving issues based on objective criteria.[90]

IV. OTHER ARTIFICIAL INTELLIGENCE TOOLS

With the advent of AI, a plethora of translation tools using automated language conversion have emerged.[91] Neural machine translation (NMT) improves upon machine translation issues such as incompatibility with certain languages and poor readability.[92] NMT involves pairing an artificial neural network with a machine translation service to provide more accurate translations.[93] Some examples of machine translation tools are Google Translate, DeepL and Bing Microsoft Translator.[94] To have an effective online dispute resolution model, NMT can be employed to help parties communicate effectively, without any potential language barriers.

A good example of an ODR automated translation tool comes from Europe. The European Commission first established an ODR method to allow European consumers submit their claims online in 23 languages.[95] According to the European Union (EU), the ODR platform makes online shopping more fair through "access to quality dispute

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[88] *Id.*

[89] *About,* SMARTSETTLE, https://www.smartsettle.com/about-us [https://perma.cc/9GCN-V7XP] (last visited Apr. 25, 2023).

[90] Lodder & Thiessen, *supra* note 42, at 8.

[91] *The Best Machine (AI) Translation Tools in 2023,* GREATCONTENT, https://greatcontent.com/machine-ai-translation-tools/ [https://perma.cc/RXN9-HQ2X] (last visited Apr. 25, 2023).

[92] *Id.*

[93] *Id.*

[94] *Id.*

[95] *Translation in Online Dispute Resolution,* LANGUAGE CONNECTIONS, https://www.languageconnections.com/blog/translation-in-online-dispute-resolution/ [perma.cc/8FVR-X8LH] (last visited April 25, 2023).

resolution tools."[96] The EU ODR tool has an automatic translation tool to help consumers communicate with traders or resolution bodies.[97] Still, the tool gives consumers the option to ask for the final outcome to be translated by a professional translator.[98] It is possible that the human translator is an excellent multilingual speaker but makes an error in technical legal jargon nonetheless, whereas a machine translator might deliver legal terms accurately in different languages but may mix up colloquial terms, or vice versa. This demonstrates the importance of having a highly accurate machine translation tool, proficient in both the technicalities of the law and the nuances of multiple languages, delivered with speed to maximize efficiency. However, as a safeguard, there must be a support tool employed within the ODR tool to call in assistance through a human professional, experienced both in legal matters and multilingualism.

Another branch of tools using artificial intelligence is automated summarizing tools. Automated summarization refers to the use of natural language processing (NLP) and machine learning algorithms to create a summary of a given text automatically.[99] Automatic summarization tools have several supplementary functions in ODR. For example, they can use data of parties' summaries for processing initial complaints and for automated case management, such as telling parties what procedural steps they must follow next.[100] Obviously, automated summarization can also assist the parties by summarizing either party's case-in-chief. While it is important that the parties read all documents in a dispute thoroughly, communication between the parties can be facilitated more efficiently if parties could ask the ODR tool to summarize documents that are sent back and forth.

Using some of these tools, we can create a new ODR system with AI technology.

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[96] *Why the ODR Platform Matters for Traders,* EUROPEAN COMMISSION, https://ec.europa.eu/consumers/odr/main/?event=main.trader.register [perma.cc/2SDF-W8UG] (last visited April 25, 2023).

[97] EUROPEAN COMMISSION, *Online Dispute Resolution – FAQ,* https://ec.europa.eu/consumers/odr/main/?event=main.help.faq [https://perma.cc/376G-7NHJ] (last visited March 3rd, 2024).

[98] *Id.*

[99] Alexander M. Rush, et al., *A Neural Attention Model for Sentence Summarization*, PROCEEDINGS OF THE 2015 CONFERENCE ON EMPIRICAL METHODS IN NATURAL LANGUAGE PROCESSING 379, 379 (2015).

[100] Lodder & Thiessen, *supra* note 42, at 7.

V. MINDFULNESS AND ITS PRINCIPLES

In addition to understanding AI technology and how it can relate to ODR, it is important to understand mindfulness and its principles. In Buddhism, the concept of *sati*, also known as mindfulness in this paper, is highly emphasized. It involves the mind's attention or awareness becoming focused and fixed on a particular object.[101] In the Jain tradition, the purpose of meditation is to control the thoughts as they influence behavior and its goal is so that one can perform daily activities with full awareness to avoid harming any living thing.[102] Mindfulness, by definition, means to be conscious or aware of something.[103] Combining these principles, mindfulness meditation is the act of allowing your thoughts to pass by like clouds instead of taking every thought at face value, so that you have a higher autonomy over your actions and their potential consequences.

A common misconception of any sort of meditation is that you need to be sitting in lotus position, eyes closed on a yoga mat. However, you can practice mindfulness meditation while taking a walk, painting, cooking, or any other activity so long as you are being mindful of your thoughts and sensations arising in your body. The ultimate goal is to just be where you are, whether you are using your breath as a focal point or a paint brush. Over time, the practice of mindfulness allows one to cultivate a sense of awareness and understanding of repeating thought patterns, thoughts that give way to certain emotions, programmed beliefs one holds, and one's habitual reactions. Once you have the awareness of the subconscious' inner workings, you have the ability to make choices: to react or to respond, to act or not to act, to speak with kindness or contention, and so on. That awareness creates space and allows you to become an observer of your subconscious emotions, reactions, and actions. Thus, with mindfulness, you activate a power of conscious decision-making not otherwise readily available.

To be a third-party neutral working with two parties in conflict with one another requires a high level of emotional intelligence. Not only do mediators need to see both sides of a situation to effectively mediate, but they must also understand how to speak to a party, and not only do the neutral parties need to build rapport, but they must also build a level

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[101] Gabor Kovacs & Andras Ocsai, ETHICAL LEADERSHIP 171-189 (Madhumita Chatterji & László Zsolnai, eds., 2016).

[102] *Id.*

[103] GREATER GOOD MAGAZINE, *What is Mindfulness,* https://greatergood.berkeley.edu/topic/mindfulness/definition [https://perma.cc/T9CU-GBTU] (last visited March 3, 2024).

of trust with the parties in dispute. At a basic level, a third-party neutral should understand the role emotions play in in alternate dispute resolution. It takes an astute awareness on the part of the mediator to know when a party is identifying with its ego in a dispute rather than coming from a place of openness and with a willingness to compromise. Moreover, to successfully navigate dispute resolution, the third-party neutral must lead the parties into a sort of dance that ends in a conscious resolution, as opposed to a battle that ends in a victory and a loss.

The very term "third-party neutral" inherently implies the notion of impartiality. Merriam-Webster Dictionary defines neutral as "not electrically charged."[104] In order to not be electrically charged, one has to be understanding of differing worldviews, values, and emotions while remaining in a state of equilibrium. Not only that but the mediator's awareness of his or her own biases, beliefs, values, and emotions plays a central role in any mediation because in order to not be electrically charged, one must have the ability to not identify with one's own worldview. Then, the mediator must let biases and emotions pass through him or her and act with impartiality. In this sense, the mediator is practicing mindfulness by definition.

Although it is crucial for a mediator to maintain impartiality or neutrality, consider the potential advantages if all parties involved in a dispute resolution possessed a certain level of self-awareness. This would allow them to navigate the process more effectively, particularly in situations where strong emotions can lead to impasses or an inability to reach an agreement.

Furthermore, mindfulness meditation can help individuals enter a flow state, in which "actions and thoughts are so intertwined your actions come naturally."[105] This can result in a more positive and productive experience for all parties, leading to greater satisfaction with the final outcome and a reduced likelihood of future conflicts. Furthermore, mindfulness practices can help individuals develop empathy and perspective-taking skills, enabling them to better understand the other party's perspective and come to a mutually agreeable solution. Additionally, mindfulness techniques can help individuals reduce stress

[104] *Neutral*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/neutral [https://perma.cc/3XFT-9EHN] (last visited March 3, 2024).

[105] MINDFULNESS STRATEGIES, *How are Mindfulness and Flow State Connected?,* https://www.mindfulnessstrategies.com/blog/how-are-mindfulness-and-flow-state-connected#:~:text=In%20a%20flow%20state%2C%20your,come%20naturally%2C%20with%20minimal%20thought [https://perma.cc/6RA6-4M7M] (last visited March 3, 2024).

and anxiety, which are common during dispute resolution processes, and improve their ability to communicate effectively.[106]

Therefore, online dispute resolution models should promote an environment of mindfulness for all parties involved as it can have numerous benefits. By encouraging mindfulness, individuals can cultivate a greater sense of self-awareness and emotional regulation, allowing them to more effectively navigate the often stressful and contentious process of dispute resolution.

VI. TYPES OF MEDIATION

Next, we must gain a basic understanding of the types of mediation styles available and which style suits the goals of proposed ODR tool best.

In the 1960s and 1970s, the only type of mediation practiced was known as "facilitative mediation."[107]According to Leonard Riskin, in facilitative mediation, the role of the mediator is to improve communication between parties to help them make decisions. The mediator does not express her own opinion, as it may compromise her impartiality, and she may not have enough knowledge about the case or relevant factors.[108] In "evaluative" mediation, the mediator helps the parties reach a settlement by highlighting the flaws in their cases and forecasting what a judge or jury would decide.[109] The evaluative mediator focuses on the parties' legal rights and bases assessments on legal concepts of fairness.[110] However, Riskin later warned that the terms "evaluative" and "facilitative" create a polarity leading to a rigidness that does not serve the mediation movement.[111]

A third type of mediation—the newest of the three—is called "transformative mediation."[112] The term "transformative mediation" was coined by Folger and Bush in

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[106] Bassam Khoury et al., *Mindfulness-Based Stress Reduction for Healthy Individuals: A Meta-Analysis*, 78 J. PSYCHOSOMATIC RESEARCH 519, 519 (2015).

[107] Zena Zumeta, *Styles of Mediation; Facilitative, Evaluative, and Transformative Mediation*, MEDITATE.COM (Feb. 27, 2018) https://mediate.com/styles-of-mediation-facilitative-evaluative-and-transformative-mediation/ [https://perma.cc/4669-NQFV].

[108] Leonard L. Riskin, *Mediator Orientations, Strategies and Techniques*, 12 ALTERNATIVES TO HIGH COST LITIG. 111, 111 (1994).

[109] Zumeta, *supra* note 107.

[110] *Id.*

[111] Leonard L. Riskin, *Decisionmaking in Mediation: The New Old Grid and the New New Grid System*, 79 NOTRE DAME L. REV. 1, 13–14 (2004).

[112] Zumeta, *supra* note 107.

1994.[113] It aims to empower each party as much as possible and have them recognize the needs, interests, values, and perspectives of the other parties.[114] "The potential for transformative mediation is that [the] parties or their relationships may be transformed during the [process]."[115] Transformative mediators meet with "[all] parties together," as they are the only ones who can give each other recognition.[116]

For the purpose of this paper, transformative mediation is the ideal type of mediation for a new ODR tool that incorporates mindfulness. By promoting mutual recognition and empathy, transformative mediation can help parties achieve deeper levels of understanding and connection, leading to more effective conflict resolution. Additionally, the emphasis on relationship-building and empowerment in transformative mediation aligns well with the goals of mindfulness.

VII. FRESH ODR TOOL: AI AND MINDFULNESS

A new ODR tool can incorporate a neutral internet server that acts as an automated mediator, much like Smartsettle and Family_Winner, to provide impartial and intelligent assistance to parties in a dispute. The server can be designed to comprehend each party's underlying interests and concerns and employs optimization algorithms to suggest effective outcomes that satisfy all parties involved. This approach ensures that both parties receive a fair resolution to their dispute.

To increase the chances of reaching a resolution, the mediation process should be conducted in a state of calmness and flow rather than contention. To achieve this, an AI chatbot can guide disputants through breathing exercises before entering a meditation session. This approach can set the tone of the mediation to one of openness, helping the parties approach the dispute with a more compassionate and understanding mindset. By integrating these practices into the ODR tool, parties can better manage their emotions and work towards a mutually beneficial resolution.

An AI chatbot can comprise a variety of tools, some of which were discussed in the AI section above. NLP is one of the main tools that AI chatbots use. NLP enables chatbots to understand and interpret language, both written and spoken. The process involves identifying the intent behind a user's message and extracting relevant information from

[113] *Id.*
[114] *Id.*
[115] *Id.*
[116] *Id.*

the message. The software can also use NLP to analyze the tone and language of disputants during negotiations or mediation and provide feedback to help them remain mindful and avoid using aggressive or hostile language.

Machine learning is also a crucial component of an AI chatbot that promotes mindfulness, as it allows chatbots to learn from user interactions and improve their responses over time. This includes both supervised learning, where the chatbot is trained on a specific set of data, and unsupervised learning, where the chatbot learns from its interactions with users. Additionally, Sentiment Analysis is another AI tool that can help chatbots identify the emotional tone of a user's message.[117] This enables the chatbot to provide more personalized and empathetic responses.

The chatbot can include an automated translation tool to ensure effective communication with clients from different backgrounds. By leveraging these AI tools, an ODR tool can provide more personalized, empathetic, and effective mediation services to disputants, helping them achieve more meaningful resolutions to their disputes. Furthermore, the ODR tool could accommodate multiple parties to serve different types of disputes, similar to Smartsettle.

Based on the Lodder and Zelenzikow three-step ODR model, the following is a proposed ODR tool for mediation that uses AI tools and promotes mindfulness:

1. Step One: Information Gathering and Feedback

Similarly to Smartsettle and Family_Winner, the ODR tool could gather relevant information about the dispute from the parties involved, such as the nature of the dispute, the desired outcomes, and the underlying interests and concerns of each party, which may be used to decide a set of decision variables to be negotiated. To enhance the efficiency and accuracy of this process, the ODR tool could use machine learning algorithms to analyze the information and provide feedback to each party about their respective BATNAs (Best Alternative To a Negotiated Agreement) and the likely outcomes of the dispute if the negotiation were to fail. The proposed tool could also employ automated summarization to provide summaries of each party's main points to the other.

[117] Vijay Kanade, *What is Sentiment Analysis? Definition, Tools, and Applications*, SPICEWORKS (Aug. 12, 2022), https://www.spiceworks.com/tech/artificial-intelligence/articles/what-is-sentiment-analysis/ [https://perma.cc/3QN6-28VL].

2. Step Two: Conflict Resolution through Dialogue and Argumentation

Using natural language processing techniques, the ODR tool could then facilitate communication and negotiation between the parties. The ODR tool should allow the parties to present their arguments, respond to each other's arguments, and propose potential solutions to the dispute. The ODR tool should also incorporate mindfulness techniques such as active listening, empathy, and non-judgmental reflection to promote peaceful communication in mediation. The tool can also include additional mindfulness exercises, such as reflective writing and guidance on using neutral, nonviolent language in communication. Additionally, the tool could also incorporate automated translation to facilitate communication between parties who speak different languages.

Transformative mediation can be facilitated through technology, such as video conferencing, chat rooms, or other online communication tools if the parties choose to remain open to communication. The ODR tool can help guide the conversation and ensure that each party has an opportunity to express their needs, interests, and values while also actively listening to and acknowledging the other parties. If the parties fail to reach an agreement through communication, they can move on to the next step.

3. Step Three: Decision Analysis and Trade-Offs

Suppose the parties are unable to resolve the dispute through step two. In that case, the ODR tool should employ decision analysis techniques to help the parties evaluate the pros and cons of different options. The tool could use numerical algorithms to determine the relative importance of each issue, just as Smartsettle and Family_Winner do. Employing transformative mediation principles and mindfulness principles, parties could enter their needs, interests, and values into the system so that they can gain an understanding of what the opposing party cares about.

Similar to the Family_Winner system, the identified values of each party that reflect their level of desire towards the issue at hand can be employed to establish trade-off rules for allocating issues through a logrolling strategy. The ODR tool could then suggest trade-offs and compensation strategies that could potentially facilitate a resolution of the dispute. The tool could also use many of Smartsettle's algorithms to promote reaching an agreement, such as a blind bidding system and rewarding good faith behavior by rewarding the party who made the smaller last move. In fact, Smartsettle has the option to add your own branding, and they will host the application. They will be part of the

app as a widget and offer API end-points. The new tool could be facilitated under the Smartsettle brand.[118]

Lastly, to improve accuracy, the ODR tool could employ machine learning algorithms to predict the likely outcomes of different options and identify areas of compromise.

4. Step Four: Recursive Process

If the result from step three is not acceptable to the parties, the ODR tool should allow the parties to return to step two and repeat the process recursively until either the dispute is satisfactorily resolved, or an impasse occurs. At all points in the process, the AI tool can track the progress of the dispute resolution process and provide personalized feedback to disputants, including suggestions for additional mindfulness practices or resources to help them remain grounded and focused. This could be especially beneficial to prevent parties from reaching an impasse. The ODR tool should also provide resources for further assistance or escalation to a human mediator, if they so desire. Ultimately, some individuals may not be comfortable relying solely on an AI bot for assistance, and there will likely be situations where resolving issues requires human intervention. Nonetheless, by leveraging the capabilities of AI systems such as ChatGPT, the need for a human mediator to facilitate the mediation process may be significantly reduced.

VIII. CONCLUSION

In conclusion, combining AI and mindfulness can lead to a more effective and compassionate ODR process. By integrating mindfulness principles into the AI-powered tools and techniques used in dispute resolution, it is possible to create a more supportive and empathetic environment for disputants, leading to more successful outcomes and long-term conflict resolution.

[118] *See* SMARTSETTLE, *Smartsettle SAAS,* https://www.smartsettle.com/smartsettle-saas [https://perma.cc/H4SU-GANA] (last visited April 25, 2023).