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Algorithmic contracts in the light of selected acts of model contract law

Umowy algorytmiczne w świetle wybranych aktów modelowego prawa umów

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Abstract: Algorithmic contracts are another category of digitally enriched contracts that are increasingly common in commercial practice. Their essence boils down to the determination by an algorithm of the content of the parties' obligation, whereby the algorithm may act as a 'negotiator' or fill in gaps in the content of pre-established contractual terms. The specificity of these contracts has legally significant consequences and raises a number of questions, e.g. whether an algorithm can create the content of a contract and whether it will be legally binding, whether it will be possible to claim a declaration of intent error when the system fails or the algorithm misanalyses data, what if the content of a statement 'made by an algorithm' did not match the intention of the person using the algorithm? The purpose of this article will be to answer the above questions by taking into account selected model acts and – as a side note, as it were – to assess the relevance of these acts for the practice of trading and contract law more broadly.

Keywords: algorithmic contracts, model law, declaration of intent

Abstract: Umowy algorytmiczne stanowią kolejną kategorię umów wzbogaconych cyfrowo, które coraz częściej zawierane są w praktyce obrotu. Ich istota sprowadza się do określania przez algorytm treści zobowiązania stron, przy czym algorytm ten działać może jako „negocjator", bądź uzupełniać luki w treści wcześniej ustalonych warunków umownych.

Specyfika tych umów ma swoje prawnie doniosłe konsekwencje i rodzi konieczność poszukiwania odpowiedzi na wiele pytań, tj. m.in. czy algorytm może stworzyć treść umowy i czy będzie ona prawnie wiążąca, czy będzie można powołać się na błąd oświadczenia woli, gdy system zawiedzie lub algorytm źle przeanalizuje dane, co w sytuacji, gdy treść oświadczenia „złożonego przez algorytm" nie odpowiadała zamiarowi osoby posługującej się algorytmem? Celem artykułu będzie udzielenie odpowiedzi na powyższe pytania przy uwzględnieniu wybranych aktów prawa modelowego i – niejako pobocznie – ocena znaczenia tychże aktów dla praktyki obrotu i szerzej prawa umów.

Słowa kluczowe: umowy algorytmiczne, prawo modelowe, oświadczenie woli

1. Introduction

Technological advancement, which the multitudes of people around the world have witnessed and often benefited from, brings noticeable changes in many domains. For civil lawyers, the observation of transformations which, in connection with technological changes take place in the practice of contracting and – more extensively – in the field of contract law, seems to be particularly interesting. For years, an entirely new category of contracts has been taking shape; the so-called digitally enriched contracts, i.e. contracts in which digital technology plays an active role in one or more phases of the "contract life cycle", be it drafting, performance or enforcement (Rizzi, Skead 2020: 6), which constitute an increasing percentage of all contracts concluded both in Poland and worldwide. Thus, in the literature on the subject, discussions on electronic contracts, the so-called *computable contracts* or, especially in recent years, *smart contracts* have already been conducted in parallel with the stages of technological development. A wider discussion of so-called algorithmic contracts now appears to be necessary. And, although the concept of algorithmic contracts may be unfamiliar to many at the moment, this situation will certainly change soon – also amongst the legal profession. Indeed, careful observation of contracting practices leads to the conclusion that their practical relevance is growing year on year, and not only in consumer transactions, but also in respect to contracts entered into by investment funds, pension funds or insurance companies. This, in turn, as in the case of the previously indicated digitally enriched contracts, makes it necessary to reflect on the adequacy of the law to the reality created by these contracts and to pay attention to their practical implications, challenges, etc.

Hence, the purpose of this article will be – apart from merely introducing the essence and significance of algorithmic contracts – to try to answer the question of whether the currently existing regulations are adequate for the re-

ality created by algorithmic contracts and, in particular, whether they provide answers to the most nagging questions implied by the specificity of algorithmic contracts. For various reasons, however, which will be discussed in more detail later in the paper, the analysis in question will be carried out in the light of selected provisions of model law, and not normative acts.

2. Algorithmic contracts – concept and typology, challenges

Algorithmic contracts are contracts in which the algorithm determines the obligations of the parties – this is how Lauren Henry Scholz accurately defined the essence of these contracts in 2017 in one of the first works devoted to this issue (Scholz 2017: 128). According to the definition proposed by Yasmine Benaich, the concept of algorithmic contracts should be understood as agreements whose terms have been specified in whole or in part in the code allowing for the automation of the algorithm, which may act as not so much a tool but as an agent of the parties, depending on the importance, complexity and predictability of the decisions submitted to it (Benaich 2012: 38).

Currently, under EU legislation, there is no legal definition of algorithmic contracts. Nevertheless, it should be noted that, through the provisions of Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (OJEU L 173/349), the concept of algorithmic trading is in circulation. Art. 4 sec. 1 item 39 of the same Directive defines algorithmic trading as trading in financial instruments in which a computer algorithm automatically determines individual parameters of orders, such as the conditions for initiating an order, the timing of execution, the price or quantity of the instruments that are the subject of the order, or the post-trade management of the order, with limited or no human intervention and does not include any system used exclusively for the purpose of routing orders from one trading venue to another, or for the purpose of processing orders not involving the determination of any transaction parameters or the confirmation of orders or post-trade processing of concluded transactions. The wording of the aforementioned definition, as with the concept of algorithmic contract, also stresses the influence of a computer algorithm in determining the terms of orders (contracts), while limiting or even excluding human involvement.

No matter how one defines the concept of algorithmic contracts, however, it is first and foremost important to highlight the fact that these contracts can be classified according to different categories and that their individual types then differ significantly.

Firstly, it is possible to categorise the contracts in question according to the type of the so-called '*box*' on the basis of which the algorithm operates. In the case of the so-called '*black box*', the way the algorithm works can only be assessed *ex ante*, and sometimes even – as Lauren Henry Scholz points out – a human being has no way of understanding how the algorithm worked. In contrast, in the case of algorithmic contracts based on the '*clear box*', it is possible to logically learn about the mechanisms of the algorithm (Scholz 2017: 135).

Secondly, the categorisation of the contracts under consideration can be made on the basis of the criterion of the 'role' of the algorithm, i.e. either as a 'negotiator' or as a gap filler.

And thus, if, at the pre-contractual stage, the party on whose behalf the algorithm is to act specifies the contractual terms that can be offered or accepted, the role of the algorithm is reduced solely to that of a 'negotiator' of those terms with the other party. The algorithm chooses which terms to offer or accept, or with which entity to enter into a contract (Scholz, 2017: 128-129).

Within this category of algorithmic contracts, the related literature has distinguished a subcategory of it, the so-called "nudging algorithmic contracts", where the purpose of the algorithm is to specify the terms of the contract in such a way as to encourage potential counterparties to enter into them (Rizzi, Skead 2020: 6).

As an illustration, in relation to those contracts where the algorithm will act as a 'negotiator', an example of the so-called *high frequency trading* (HFT) can be provided. These contracts, which are widely applicable in financial markets, are concluded in practice by an algorithm that has the ability to quickly respond to changes in the financial market and allows for the syntax and possible execution of orders at frequencies specified in milliseconds (Lenczewski Martins 2017: 207).

As far as the so-called gap-filling algorithms are concerned, their aim will be to fill a gap in a standardised set of conditions. Such a classic example of contracts based on a gap-filling algorithm are those concluded for the purchase of airline tickets, where the price of the ticket offered will be determined by an algorithm based on data such as flight time, destination, number of flights, etc. (Scholz 2017: 134).

Based on the above-mentioned definitions of algorithmic contracts, their categories and practical examples of application, it is possible to distinguish certain elements, the occurrence of which is a condition *sine qua non* for a specific contract to be assessed in terms of algorithmic contracts, i.e.: these are contracts based on pre-constructed decision-making models, where human intervention and participation is actually reduced to the notion of a decision

as to the role of the algorithm, i.e. as a 'negotiator', 'agent' of the parties or as a tool for determining and fulfilling those provisions in the contract which have not been previously agreed upon by the parties and which are characterised by automatism. Such specificity of algorithmic contracts has its own legally far-reaching consequences and raises many questions. It should be noted that in the classical approach to contract law, a contract is essentially an expression of the will of at least two parties aiming to produce the legal effects specified in its content. Meanwhile, in the case of algorithmic contracts, declarations of intent are made without the direct participation of a human being, who not only may not know the final content of the specific contractual terms, but also has no knowledge when the algorithm acting on his behalf made such a declaration. Furthermore, the use of algorithms may also lead to a situation in which the algorithm takes actions that are not and indeed could not have been foreseen by the algorithm's creator, be that because the algorithm acted on the basis of erroneous input data or on the basis of a combination of such data that the algorithm's creator was not able to foresee. These challenges, though, are no longer merely hypothetical. For instance, one of the books sold on Amazon was erroneously valued by the algorithm at USD 24 million, which did not correspond to its real market value (D. Demetis, 2019), or the dispute before the Singapore court in the case of Quoine v. *B2C2 Ltd*, which concerned a series of cryptocurrency transactions on the currency exchange platform (*Quoine)*, which were carried out at 250 times the market rate (in favour of *B2C2*), due to an error in the *Quoine* trading algorithm. These transactions were then unilaterally amended by *Quoine*, who argued, inter alia, that this was necessary because the contract contained provisions resulting from the malfunctioning of the systems and were therefore invalid. As a consequence, *B2C2* initiated proceedings against *Quoine*, claiming that *Quoine*'s decision constituted both a breach of contractual terms between the parties and a breach of trust (Olivier 2021: 46).

In the light of the above, a number of questions arise almost intuitively as to the adequacy of the current legal rules to the reality created by these contracts, i.e., for example, those concerning the effectiveness of legally binding declarations of intent by the algorithm or the possibility to invoke an error of declaration of intent in the event of a disruption in the operation of the algorithm. These doubts seem to be relevant not only in the context of the national legal order, but also in the context of the legal orders of individual states or, more broadly, European Union law. Even though it is not possible to discuss the legal systems of individual European countries in detail in this paper, if only due to editorial limitations, it seems justified to refer to the above mentioned issues in

the context of selected model acts of law, and there are at least several reasons to do so, which will be discussed in more detail later in this article.

3. Model acts – brief overview

In the sphere of European law, especially at the end of the twentieth and the beginning of the twenty-first century, a discussion emerged about the necessity of creating a comprehensive, uniform and internally coherent regulation systematised at the same time on the model of a code, which would constitute a common framework in the area of private law, i.e. the so-called model codification. This idea was transformed into documents such as the Principles of European Contract Law (PECL), the Draft Common Frame of Reference (DCFR) and, on a global scale, the UNIDROIT (Principles of International Commercial Contract).

The PECLs are the product of the work of the Commission on European Contract Law, and their application concerns primarily Community contractual relationships and therefore only those entities that can be said to have a Community affiliation. In practice, PECLs will most often be applied between participants in professional commerce who are established in the territory of the European Union, although their application cannot be excluded in cases where only one of the parties has Community affiliation, as well as in situations of consumer commerce (Juranek 2020: 32-49).

As part of PECL, the so-called general issues related to, among others, the principle of freedom of contracts, customs, practice, general and detailed rules of interpretation, but also, among others, issues of power of attorney, validity of contracts, legal protection measures (Rajski 2002: 219).

In 2003, the European Commission presented an action plan in which it proposed to take further steps towards a common European contract law that would take into account not only the *acquis communautaire*, but also the principles that are common to national contract laws and are set out in PECL. This task was entrusted to a group of legal academics who undertook to create not only the principles of contract law, but also the entire law of contract and some aspects of property law. As a result, the *Draft Common Frame of Reference* was created (Kötz 2017: 10), which consists of three parts: *principles*, *definitions* and *model rules* (Wilejczyk 2008: 51).

However, as far as *the UNIDROIT Principles of International Commercial Contracts* are concerned, these were first issued in 1994 by the International Institute for the Unification of Private Law based in Rome.

The scope of application of the UNIDROIT Principles is set out in the preamble. In its light, the Unidroit Principles may be applied, inter alia, when the

parties have agreed that their contract will be governed by general principles of law or *lex mercatoria* (Pacocha 2012: 149, 152).

Some of the projects discussed above were, according to their creators, also supposed to have a normative role (Machnikowski, 2019: 175). Ultimately, which needs to be emphasised, they are not, in principle, legally binding, hence the attribute of the so-called '*soft law*' is given to them. Despite this, as mentioned earlier, the reasons justifying the need to refer to selected acts of model law in the context of algorithmic contracts and institutions of declaration of intent are not lacking.

4. Relevance of model law acts for algorithmic contracts

In assessing the relevance of model law acts for algorithmic contracts, and thus also referring more broadly to the overall assessment of model law itself, it should first of all be noted that the development of model law acts was preceded by comparative research oriented around identical source material, i.e. acts of national and international law. The result of the above was, inter alia, the conclusion that the contemporary legislation of national legislations can exist 'on its own' to an increasingly smaller extent, i.e. in isolation from analogous regulations found both in supranational law and in the legislations of foreign states. As rightly pointed out by Alexander Martin Juranek, it is not, however, about the postulate of uncritical duplication of institutions existing in different legal systems for the needs of each case under consideration, or the 'sameness' of solutions adopted in a given scope, but about creating a kind of 'adaptation instrument' for the body applying the law (Juranek 2020: 32-49).

Secondly, as indicated in the literature on the subject, the acts of model law create an opportunity to refer to those legal solutions that have been subjected to a specific 'test' in the legal systems of states by the creators of these acts of model law, and which have subsequently been incorporated into these acts. As indicated, the model law solutions will be characterised by their scientific provenance and academic nature, and by the linking of their content to many indigenous legal institutions (Juranek 2020: 49).

Thirdly, as the authors of PECL pointed out, model law acts can also be a source of inspiration for legislators from different countries, as well as create a kind of 'bridge' between two strongly different domestic legal systems, i.e. civil law and *common law* (Machnikowski, 2019: 176).

Finally, it is argued, taking at least the example of PECL, that model acts allow the creation of a set of neutral (or, more precisely, not bound to any state) rules to which a contractual relationship between entities from different states can be subjected (Machnikowski, 2019: 176).

In view of the above purely theoretical and legal considerations, the question then arises as to whether, in fact, the acts of model law with regard to the specifics of algorithmic contracts and the institution of a declaration of intent make it possible to provide answers to the most frequently resounding questions in the context of algorithmic contracts, i.e. *in concreto*, whether an algorithm can create the content of a contract and whether it will be legally binding, whether it will be possible to invoke an error of declaration of will when the system fails or the algorithm analyses data incorrectly, what about the situation when the content of a statement 'made by an algorithm' does not correspond to the intention of the person using the algorithm? And further, do model acts fulfil in practice the functions assigned to them earlier and correspond to the challenges created in the field of contract law by algorithmic contracts? In this paper, the above questions will be answered mainly based on the principles of PECL as well as DFRC.

As for the first of the above-mentioned questions, i.e. the ability of an algorithm to create the legally binding content of a contract, it should be indicated, following Wojciech Kocot, that none of the major legal systems introduces a limitation or prohibition on making declarations of intent (concluding contracts) with the use of automated IT systems (Kocot 2004: 88). The above can certainly be applied also in relation to the algorithmic contracts being the subject of this paper, where the algorithm will be just such an automatic IT system. In fact, this type of assessment is directly in line with the universally accepted principle of freedom of contract in many legal orders, an element of which is also the private autonomy of subjects also with regard to the choice of the form of the binding of the parties to a legal contract with the actual use of a digital system, thus also in a situation where the content of the contract is constructed in a digital language and with the use of an algorithm (Kowacz, Wielgus 2021: 55). For this reason, it should not come as a surprise that also in light of the provisions of the model law, this type of claim has merit. Indeed, according to Art. 1:102 PECL, the parties are free to shape the content of their contracts within the limits of good faith, fair dealing and the absolute provisions contained in the PECL. The freedom to shape the content of the contract also means, for example, the freedom to determine the place of performance (Art. 7:101 (1) PECL), the date of performance (Art. 7:101 (1) PECL), or the currency of payment (Art. 7:108 PECL).

Also in UNIDROIT, specifically in Art. 1.1 item 1, the principle of freedom of contract is adopted as universally applicable, stating that the parties are free to conclude contracts and determine their content. The principle of freedom of contract is somewhat more broadly regulated in the DCFR than in the case of the two acts previously indicated, where Art. II.–1:102 item1 provides that the

parties are free to enter into a contract or other legal act and to determine its content, subject to the principles of good faith and fair dealing and any other applicable law.

Following the issue of the freedom of contract principle, it is still worthwhile – with regard to algorithmic contracts – to dwell on the issue of general prerequisites for the conclusion of a contract. After all, as indicated in the earlier parts of the paper, one of the possible ways in which an algorithm can operate is by filling in gaps, including those concerning e.g. price. Nevertheless, according to the rules of the PELC, the question arises whether such a manner of contract conclusion, i.e. when one of its provisions is filled in by the algorithm, will meet the prerequisites of a validly concluded contract. Indeed, according to the wording of Article 2.101 PECL, a contract is deemed to have been concluded as soon as the parties have expressed their intention to create a legal relationship binding upon them and have agreed on its sufficient content, without any other conditions being required. In this context, the notion of "sufficient specification of the contractual provisions" therefore appears to be problematic.

Well, with reference to the previously cited principle of freedom of contract, it must be pointed out that even in a situation where it is the algorithm and not, as literalised in Art. 2.101 PECL, the party to the contract that agrees on sufficient content, such a contract will be validly concluded. Incidentally, it may be added to the view expressed in the literature on the subject that even in the situation where the parties do not regulate such issues as, for example, the price in the contract, such a contract will be deemed to have been concluded, because in such a situation the dispositive regulations contained in Chapter 6 of the PECL may apply. This is because what is legally more relevant is the fact that an agreement has been reached as to the type of contract (e.g. sale) and some of its essential provisions relating to the subject of the contract, its quantity (Kukuryk 2009: 125).

Continuing the search for answers to the questions posed earlier, it seems necessary to look further into the issue of defects in a declaration of intent in the case of algorithmic contracts. Unlike in the situation of the possibility to conclude a legally binding contract by means of an algorithm in the light of the freedom of contract principle, this aspect seems to require deeper reflection, being a more demanding 'test' for the adequacy of solutions adopted in the model law. The above, in turn, stems from an extremely important circumstance, namely the fact that contemporary legal systems explain the essence of a legally significant defect in a declaration of intent in different ways, also with regard to the issue of an error (Gajek 2020: 267). Before the above differences are briefly presented, however, it should be emphasised that declarations of

intent made by means of electronic communication do not constitute any new type of declarations of intent in the legal sense, and their dissimilarity results only from the technical aspect, leading to the conclusion that all provisions on defects in declarations of intent should be applied to them (Gajek 2020: 267).

Thus, German law provides that the effects of a declaration of intent that has been incorrectly communicated (*unrichtig übermittelt*) by a person or instrument used for that purpose (*Einrichtung*) may be evaded under the same conditions as provided for in § 119 BGB (Bürgerliches Gesetzbuch/Civil Law Book), which regulates the question of the undermining of a declaration of intent made under the influence of an error. Evasion of an 'unwanted' declaration of intent made by automated means thus occurs, in principle, on the basis of the provisions on the distortion of a declaration by a messenger (Gajek 2020: 267).

Meanwhile, in the light of the provisions of Polish law, it seems justified to cite the position of Wojciech Kocot, who stated that "whoever uses automated communication systems in his business activity must take into account the risk of an undesired result of using such means of expression and take full responsibility for it towards his counterparty. It must be assumed that this risk is permanently inscribed in the nature of the legal relationship established by means of automated communication and that cases of successfully invoking a defect in a declaration of intent in such circumstances should belong to the completely exceptional" (Kocot 2004: 134).

The above discrepancies should – at least in theory – be mitigated by model laws. Yet, is this also the situation seen in practice?

Well, first of all, it should be noted that, under PECL, the issues related to an error of declaration of intent have been regulated in such a way as to take into account the actual intention of the parties to the fullest extent possible, allowing not only the cancellation of the contract, but also its performance in accordance with the erring party's understanding of it. As assessed in the literature, the PECL's regulation of misrepresentation attempted to balance the interests of both parties to the contract, while taking into account all factors relevant to the assessment of the situation of the entity entering into it under the influence of misconceptions – the relevance of the error, the state of knowledge of the counterparty, its impact on the formation of the error and the honesty of its conduct, the diligence of the erring party itself and the contractual distribution of risk (Machnikowski 2022). Pursuant to Art. 4:103 PECL, a party may avoid the effects of a contract on account of an error of fact or law existing at the time the contract was concluded if: (a)(i) the error was caused by information given by the other party; or (ii) the other party knew or ought to have known of the error and it was contrary to good faith and fair dealing to leave the party in error; or (iii) the other party made the same error, and (b) the other

party knew or ought to have known that the party who was mistaken, had he or she known the truth, would not have entered into the contract or would have entered into it only on substantially different terms. However, a party may not avoid the contract if: (a) in given circumstances its mistake was inexcusable, or (b) the risk of the error was assumed by it or, in given circumstances, should have been borne.

The provisions of PECL have been taken over into the DCFR with minor modifications, although it should be pointed out that in the case of the DCFR, the question of the legal significance of the error is rather complex, especially as regards the grounds for invoking the defect. Thus, the DCFR (Art. II. – 7:201) provides for the following conditions, the cumulative occurrence of which makes it possible to rely on an error (whether it concerned a fact or a right):

(1) if the party had not acted erroneously, it would not have entered into the contract, or would have entered into it only on substantially different terms, and the other party knew or could reasonably have been expected to know this, and

2) other party:

(a) caused the misrepresentation (actively by communicating – even if in good faith – the misrepresentation and not merely by its failure to lead the counterparty into error) or

(b) caused the contract to be concluded under conditions of error by knowing or having reasonably been expected to know of the counterparty's error and, contrary to the requirements of good faith and fair dealing, failing to deceive the counterparty, or

(c) caused the contract to be concluded under conditions of error by failing to perform a pre-contractual duty of information or a duty to provide a means of rectifying mistakes in the data input, or

(d) was affected by the same mistake.

At the same time, the DCFR provides for two negative prerequisites precluding the cancellation of a contract due to an error. The first is that the error was, in the circumstances, inexcusable, i.e. a party fell into it as a result of its own negligence and without at least a comparable fault on the part of the other party (which could also consist of a failure to lead the counterparty out of the error, if this would have been easy). The second negative premise, on the other hand, boils down to the fact that a party cannot rely on a mistake if it has assumed the risk associated with ignorance of certain facts (it is aware of its ignorance and nevertheless determined to enter into the contract) or, under the circumstances, should have borne that risk (Machnikowski 2022).

The consequence of a mistake, according to the DCFR, is the possibility to cancel the contract, which is effected by declaration to the other party

(Art. II.–7:209 DCFR), as well as liability for damages, provided for in Art. II.–7:214 DCFR.

Evaluating the above regulations in the context of the peculiarities of algorithmic contracts and the challenges they also bring to the practice of legal transactions, one may venture to claim their relative adequacy. In a certain sense, it can even be said that they express a certain optimal legal state in the analysed issue, as the scope of their regulation includes the necessity to take into account the interests of both parties to the contract, as well as the necessity to take into account a number of relevant factual circumstances, the situation of the entity entering into it under the influence of misconceptions. Thus, by translating the above-mentioned content of the acts of model law into the aforementioned case of *Quoine* vs. *B2C2 Ltd*, it would be possible to make a rational assessment of this case and refer to the DCFR regulations regarding the error and the conclusion of the dispute in question. Moreover, in the face of these model rules, the final outcome would be predictable, which in turn increases the level of certainty for the participants in the trade. If the above is juxtaposed with the fact that the provisions of the model laws in question are intended to be universal, i.e. they can be applied without geographical restrictions and are not tied to a specific country, then at least theoretically the evaluation of the model laws in this respect should be *in plus*.

The following question then remains to be considered, in line with the questions presented earlier: what if the content of a statement 'made by an algorithm' did not correspond to the intention of the person using the algorithm?

In German doctrine, the so-called concept of declaration of intent based on the principle of liability for induced trust has been formed, according to which declarations of intent made in the context of electronic communication will concern those behaviours which the addressee could assume to be a manifestation of the sender's will – the programme user (Gajek 2020: 37).

Polish doctrine, on the other hand, accentuates that when assessing the problem of a possible discrepancy between the content of statements generated in an automated manner and the actual will of the user, the protection of the subject acting in trust of the declarant's behaviour and the legitimate expectations induced as a result should come first (Gajek 2020: 37).

Anglo-Saxon doctrine, on the other hand, to some extent analogous to the views presented in the United States, has developed a concept, according to which protection should be granted to such an interpretation of a programmed machine's actions as would be shared by reasonable addressees. This concept was developed on the basis of the 1971 English court decision in Thornton v. Shoe Lane Parking, where the court held that a parking machine expressed the will of its owner, and the good faith of customers should be protected (Gajek 2020: 37).

In the context of the above, the question then arises as to whether, in fact, acts of model law can, with respect to the institution of a declaration of intent, set a certain common line of interpretation that can be adequately used in the practice of algorithmic contracts?

Primarily, it is necessary to emphasise a fact, perhaps seemingly hardly surprising, however indispensable in the context of the applicability of model law, namely that within the framework of PECL their creators undertook to regulate the issue of the interpretation of declarations of intent made by the parties to each other, providing in this respect for general rules as well as special rules, the latter playing an auxiliary role in relation to the general rules (Dąbek 2009: 38).

Thus, according to Art. 5.101 sec. 1 PECL, a contract is to be interpreted in accordance with the common intention of the parties, even if that intention differs from the literal wording of the words used by the parties. However, according to sec. 2 of Art. 5.101 PECL, if it is established that one of the parties intended to give the contract a particular meaning and the other party could not have known this at the time of the conclusion of the contract, the contract should be interpreted in accordance with this meaning.

Importantly, this rule will apply when the interpretation of the contract cannot be established by relying on the subjective intention of the parties, and thus on the basis of the first interpretative rule. As Paweł Dąbek comments on the provision in question, the basis for interpreting the parties' statements of intent is to read the intentions of the parties entering into the contract. Not until this method turns out to be inapplicable should one resort to the objective method, and thus specifically consider the meaning of the expressions and phrases contained in the contract that the addressee could objectively attribute to the content of the declaration of intent made. Accordingly, if it is established that one party intended to give a certain meaning to its declaration of intent and the other party could not have been unaware of the meaning the addressee gave to its declaration of intent, the contract must be interpreted consistently with the declaration of intent made. In addition, it should be emphasised that in the phase of objective interpretation of the parties to the contract are confronted, since on the one hand we are dealing with the person making the declaration of intent (the sender), and on the other hand with the recipient of the declaration of intent, i.e. the addressee. As far as the interpretation of the declaration of intent is concerned, the addressee's viewpoint is decisive; however, the addressee should strive to reproduce the mental content of the declaration of intent of its sender. At the same time, the sender, when formulating the declaration of intent, should do so in such a manner that its will be understood by the addressee. Thus, in order for the second interpretative rule

to be applied, it is necessary to demonstrate that the interpreting party could not have been unaware of the intention of the person making the declaration of intent. As Paweł Dąbek points out, this interpretation may lead to a situation where the contract is interpreted contrary to the intention of the person making the declaration of intent – i.e. when the addressee demonstrates that he or she was unaware of the intention of the person making the declaration of intent. In determining the possibility that the recipient of the declaration was unaware, the recipient's failure to exercise due care is taken into account. Where the addressee of a declaration of intent could and should have known the meaning to be ascribed to the sender's declaration of intent, then the interpretation of the declaration of intent ascribed to it by the maker of the declaration is adopted (Dąbek 2009: 38, 39).

Lastly, the wording of PECL provides for a so-called 'common sense' clause, which is based on the premise that if it is not possible to ascertain the intention of the parties by applying the interpretative rules discussed above to the provisions, it should then be interpreted in accordance with the meaning that reasonable persons of the same type would give to it in the same circumstances. The adoption of the above concept is a reference to the notion of a reasonable person derived from the *common law* system tradition. In such a case, for example, life experience, practical experience in the relevant field, or knowledge of the language used will be taken into account. The question of how such a person would behave in the contracting party's position must then be answered.

When evaluating the form of the above regulations in the context of the features of algorithmic contracts, one can again approve of their adequacy. Particularly the exhaustive regulation of the issues in question with the application of corrective rules, such as the 'common sense' clause, which facilitates the rationalisation of the assessment and its greater adaptation to the facts of the case, should be regarded as an advantage.

5. Conclusions

The conclusions drawn from these considerations have already been expressed by the author at various points in the proposed analysis. Apparently, then, at the stage of summarising, these conclusions should be reiterated and systematised. For in principle and in theory, the individual regulations of the model acts in the scope of the discussed institutions of law have a fairly high level of adequacy and actually correspond to the objectives that these acts should fulfil. In closing, however, the author cannot fail to refer to what, in her opinion, is an entirely correct assessment presented by prof. Machnikowski, namely that

only "in theory there is no difference between theory and practice, while in practice there is" (Machnikowski 2019: 179). With some disappointment, again following prof. Machnikowski, it has to be asserted that model acts are virtually never chosen by the parties as the law governing their legal relationship, nor are they used by the courts and, apart from the marginal use of these acts as arguments in favour of a particular interpretation of the law, they are also not used by the arbitral tribunals when gaps in the law are detected (Machnikowski 2019: 179). Nor are there any prognoses to substantiate the claim that the approach to model laws would change in the near future. Therefore, at this point, the question about the sense of their creation and, treating the matter a bit more personally, about the sense of conducting scientific analyses in this respect, such as the work in question, seems to be completely appropriate. In the author's opinion, apart from the fairly obvious possibility of engaging in a scientific discourse in this area, the analysis in question proves another – in the assumption of a completely unplanned thesis, which at the same time is a metaphor for a rather truistic statement used repeatedly in the doctrine of new technology law – namely that selected acts of model law (of course, with regard to the subject matter of the present paper) keep up with the development of new technologies, and thus can constitute a certain benchmark for possible changes in the law.

List of abbreviations

DCFR – Draft Common Frame of Reference
PECL – Principles of European Contract Law

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