Intelligent Electronic Inter-Systemic Contracting - Issues on Contract Formation

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Electronic Contracting as an object of legal studies is getting more and more complex. Computers are currently being used not only as a way of searching and processing information, but also as communication tools, as automatic operators and already as a way of developing and accessing new forms of intelligent behaviour through the use of intelligent devices. New ways of electronic communicating and contracting have appeared and with them different kinds of interactions that must be analysed in electronic contracting: human interaction through electronic devices, human interaction with electronic devices, automated computer interaction and intelligent computer interaction. This led Brazilian legal doctrine to establish a specific way of classifying electronic contracts: Interpersonal Electronic Contracting, when computer is used as a mere communication tool, allowing both simultaneous (through Chat, Video-Conference) and non-simultaneous (through electronic mail, mobile phone written messages) contracting; Interactive Electronic Contracting, when interaction is effected between a human party and an informatics system, either through means of semi-automatic interactive connection (a natural person interacting with a previously programmed device automatically "declaring the will of its owner") or through means of human communication with an "intelligent device"; and Inter-systemic Electronic Contracting, when offer and acceptance derive from an electronic dialogue (and acting) between electronic systems or devices which are able to act on their own, without any human intervention. As far as Inter-systemic Electronic Contracting is concerned we can also distinguish two important sub-groups: "automatic inter-systemic electronic contracting", as the informatics systems on their own execute in an automatic way the instructions previously incorporated in the programme (EDI), and "intelligent inter-systemic electronic contracting", for the special case of electronic devices contracting through the only intervention and interaction of autonomous intelligent systems, capable of acting, learning, reasoning, modifying program instructions and taking decisions.

Inter-systemic Electronic Contracting is most challenging for legal theory, especially in what declaration of will and consent are concerned. In all the other above mentioned kinds of contracts the parties can still totally control the process of contract formation, either when both parties actually perform the acts embodying offer and acceptance, or at least when one party electronically "adhere" to contractual clauses predisposed and offered to the public by the other party. But in Inter-systemic Electronic Contracting, the whole process of communication is "between applications" without any human intervention.

As far as "automatic inter-systemic contracting" is concerned, there are two main ways of facing the problem of consent: either by requiring an expression of will for each message exchanged, which lead us to the question of the electronic or digital signature (however, these transactions require full automated process, which means that it would be completely useless to require a personally digitised signature for each message); or by having a single expression

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of will displayed when the system is set up or initialized, that's to say through an Interchange Agreement, stating the will of the parties to a fully acceptance of the contents and effects of the legal transactions to be concluded. Anyway, the interconnection of the systems by itself already reveals this full acceptance of contents and effects. The behaviour of the parties, keeping the system functioning, is totally conclusive.

Yet, Intelligent Electronic Inter-systemic contracting requires a different analysis. Because intelligent artefacts will not only act according to its in-built knowledge and rules, but they will also be able to learn from experience, modify its own behaviour, according to cognitive, reactive and pro-active processes quite similar to human acting and reasoning. This leads us to an imperious need of analysing the question of expression of consent in inter-systemic intelligent transactions in a different way. Some possibilities must be dealt with: firstly, the possibility of considering a computer intelligent agent as a machine or tool. As Jean-Franois Lerouge puts it, "if a party create a situation in which an electronic agent is to act on his behalf, then a party is bound by the actions of the "agents"". The assent of the electronic agent would be inferred from the assent of the (human) user of the agent - the risks of the transactions would entirely be put on the persons who program, control or use the electronic agent. Another possibility could eventually be the application of the rules of representation, mandate or agency to electronic transactions. However this possibility faces a major difficulty, as for its full implementation we must analyse whether or not electronic agents can be considered as legal persons, in order to have legal personhood and legal capacity to undertake binding transactions. So, attribution of legal personhood to electronic agents could be a solution with some advantages. It would solve the question of consent and of contracts validity without affecting the established civil law theories. And it would reassure programmers, owners and users of the agents in what liability is concerned, by limiting their own liability while considering an "agents liability". But conferring legal personhood to electronic agents also faces some difficulties. Issues such as identification and domicile of agents, as well as the need of attributing them a patrimony, could become difficulties. Not to speak of the daring possibility of agents dividing or multiplying themselves "into undistinguished copies". A special registration procedure would be required for authorized agents, as well as a minimum patrimony and eventually a special insurance regime. Another possible solution would be, as Giovanni Sartor suggests, to create companies for on-line trading, "which would use agents in doing their business". The consent of the agents would "represent" the will of the company and counterparties would be warranted by the capital of the company. But this seems like considering agents as a tool of a "limited responsibility company".

Further possibilities must be exploited. For instance, to foresee a new legal approach of the contract itself, considering not the agreement of wills but the resulte of the acts of machines or devices predisposed by human or corporate bodies. Or even to consider informatics systems as instruments capable of creating new forms of life, maybe new germs of legal personhood.

The debate about Intelligent Inter-systemic contracting is still beginning. New developments are arising in the field of Artificial Intelligence such as the "embodying" of electronic "conversational agents". Virtual persons will get more and more identifiable. An ultimate choice must be made between the fiction of considering agents acts as deriving from human's will and the endeavour of finding new ways of considering the electronic devices own will and responsibility.