Privacy policies between perception and learning through Legal Design: ideas for an Educational Chatbot combining rights'awareness, optimized user experience and training efficacy.

Sergio Guida[a]

[a] *University of Naples "Federico II", Italy – Master AI4U Student*

Abstract

Legal Design is inspired by the concepts of Design Thinking and User Experience: the ultimate goal is to make citizens more aware with well-designed rules and procedures in terms of 'Proactive law', providing policies that are truly user-centered, tailored to the cognitive needs both expressed and hidden through continuous and transparent communication. Talking about privacy, there is a clear need, starting from the analysis of the texts of some documents (e.g.'information on the use of personal data' and 'consent'), to translate 'bureaucratic' requests into simpler questions, as to allow the more intuitive, usable and inclusive user experience.

So, in the wake of the GDPR view too, we have been experimenting how the advantages of communicating and involving the citizens *by design and by default* can prove to be the right key so that the privacy documents they encounter in the everyday life can finally transmit transparency and a sense of control of the situation that are both much more substantial and immediately perceptible.

The future developments of the project will be focused on enhancing access to safeguards for digital privacy, as well as citizens' awareness of their digital rights, *a fortiori* for the weakest subjects, with a chatbot providing personalized educational/assistance services. In the final stage I will be concepting a prototype of such an educational chatbot ranging between rights to be deployed, user experience to be exalted and training effectiveness to be ensured.

Keywords

Digital Rights, Visual Law, Legal Design, User Experience, privacy policy, educational chatbot.

1. Introduction

Everyday people, both as individuals and families and as businesses, are forced to interface with contracts, documents and legal procedures often without having the appropriate skills to "navigate" these systems. In many countries, the difficulty of bureaucracy and legal language often puts citizens in difficulty, causing a sense of inadequacy towards the legal system but also the feeling of not having full control of their situation (Inesi, Botti et al., 2011).

So, some researchers have been discussing how the legal system could be rethought in terms of language and tools through the design approach. The discipline that tries to answer this question has been called "Legal Design" (Hagan, 2017) and aims to bring the legal world closer to people who have no training or experience in the legal field (Parrilli, 2020).

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EMAIL: ser.guida@studenti.unina.it, essegi@fisicagestionale.com

In general terms, Legal Design is inspired with the concepts of Design Thinking and User Experience (UX) (Garrett, 2010): the intent is to maintain an approach that puts people at the center of the design and delivery of services also in the legal world to make the more intuitive, usable and inclusive user-experience.

Not only does a graphic and visual form made more effective in terms of Visual Law[1] help to understand the content of a privacy document, but it can also help the understanding of the related legal process.

In essence, the goal is to make citizens more aware with well designed rules and procedures in terms of 'Legal Design', also towards the production of documents – just like in the Privacy's field[2] - that are simple, clear, attractive to the recipients (Sahota, 2021) and enable them to know synthetically but in a complete way all the rights recognized by the data protection regulations.

My project aims at improving the information addressed to individuals in the procedures for accessing legal protections on privacy through the redesign of formulas, forms, graphic interfaces and the construction of an educational chatbot that provides for a dynamic interaction with the user in a solution-oriented manner (Brunschwig, 2021). A chatbot is a software tool that interacts with users on a certain topic or in a specific domain in a natural, conversational way using text and voice. For many different purposes, chatbots have been used across a wide range of domains, including marketing, customer service, technical support, as well as education and training. Rather than creating a human-like smart machine application, it is about creating effective digital assistants who are able to provide information, answer questions, discuss a specific topic, possibly before the user gives his/her consent to a website's privacy and cookie policy.

So the ultimate goal of this project is to design and develop an educational chatbot who can help the user to fully understand the privacy policy when entering a website. By teaching what are his/her rights and how they can be effectively deployed, the chatbot will act as a trainer, too.

2. Legal Design, background and perspectives.

In the creative society, consumers not only receive products or services and engage with the providers via feedback and customised requirements but also generate the solutions to their own needs (Iba 2010), acting as so-called 'prosumers' (Santuber, Owoyele, Krawietz, Edelman, 2018)[3].

The environment of the creative society will not only allow its design but will solicit from groups and individuals in constant redesign cycles (creation): for instance, legal hackathon formats or legal design workshops constitute sparks of what in the future will be widespread and commonplace in the Creative Legal society (Santuber, Owoyele, Krawietz, Edelman, 2018, cit.).

Under the new paradigm of the creative society, the capability to 'create' will no longer be exclusive of corporations but available to teams of individuals and communities.

In the last years, Legal Design has emerged pushing from the periphery to the centre of the legal system introducing concepts like human-centeredness, creativity, visualisation in legal communications. In the spirit of setting a space for a metatheory for Legal Design as an academic discipline, some authors (Santuber, Owoyele, Krawietz, Edelman, cit.) proposed four theories from which they could leverage: (i) autopoietic systems (Maturana & Varela, 1980) (ii) social systems

[1] Cf. "In many cases a document — such as a piece of legislation or a contract — in itself is not the goal; its successful implementation is. Implementation, in turn, means adoption and action, often a change of behavior, on the part of the intended individuals and organizations. Law school does not teach us how to enhance the effectiveness of our message. .. When it comes to other users of our content and documents, we can benefit from starting to think about 1) who these users are, 2) what they want or need to know, 3) what they want to achieve, 4) in which situation, and 5) how we can make our content and documents as clear, engaging and accessible as possible", as we can read in Helena Haapio, Stefania Passera, Visual Law: What lawyers need to learn from information designers, May 15, 2013. URL: https://blog.law.cornell.edu/voxpop/2013/05/15/visual-law-what-lawyers-need-to-learn-from-information-designers/.

[2] Cf." Privacy and data protection are some of the fields where legal design can really make a difference. Every day we use services and solutions that come with long and unreadable privacy policies, but in reality, the respect of our privacy rights is far from ideal. (..) Legal designers make sure that products are designed meeting legal and ethical standards and that they will be sustainable in the long run", writes Davide M. Parrilli, Legal design explained. Merging legal and design knowledge is the key to develop better products and improve user's experience, Sep 24, 2020. URL: https://uxdesign.cc/legal-design-explained-e43129710cd9.

[3] Cf. Joaquin Santuber, Babajide Owoyele, Lina Krawietz, Jonathan Edelman, The need for a Legal Design metatheory for the emergence of change in the creative legal society. December 2018 Conference: JURIX 2018 Workshop "Legal Design as Academic Discipline: Foundations, Methodology, Applications"At: Groningen, Netherlands. URL: https://www.researchgate.net/publication/338898360_The_need_for_a_Legal_Design_metatheory_for_the_emergence_of_change_in_the_creative_legal_society, page 2.

theory from Luhmann (1995) and (iii) creative systems theory by Iba (2010) and (iv) design theory. They stated that such a meta-theory approach is a pluralistic lens rather than a totalizing one (Fig.1).

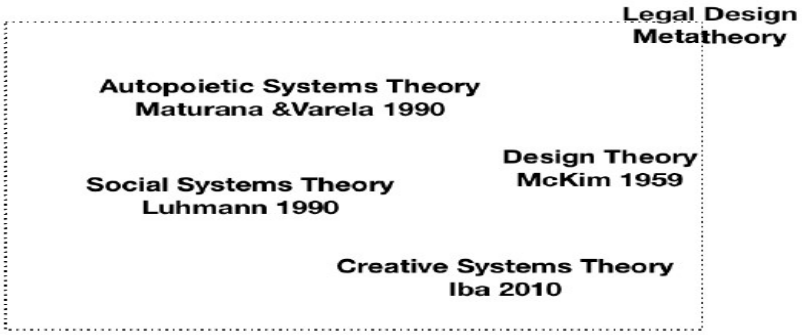

Figure 1: Legal Design Metatheory (*Image by Santuber, Owoyele, Krawietz, Edelman*).

Operationally, Legal Design is characterised as a network that articulates the coupling of the autopoietic systems. The constructs are (a) human being, (b) creative process and (c) Law, so Legal Design is materialised in the interaction of constructs (Fig. 2). While the formalities of a legal system restrain communication within the same, thus depriving it of creative opportunities, networks can be described as continual, communicative relationships of exchange, characterised by informality, innovative power and the ability to self-organise.

Therefore, the practice of Legal Design requires a media to facilitate the interaction between the human being, the creative process and the Law, so that:

a) These media are models and frameworks, deployed in concrete tools for the practice of Legal Design.
b) The structural coupling emerges as a perception-action cycle. In this loop, the perception of one system from another system occurs, because the latter is acting on the first.

In this scheme,

- ✓ the human being perceives the legal system and acts on the creative process as a contributor.
- ✓ The creative process perceives it and acts on the legal system.
- ✓ The legal system perceives it and act on the human being who originally perceived the legal system. Each cycle implies an adaption and reorganization of each one of the constructs".

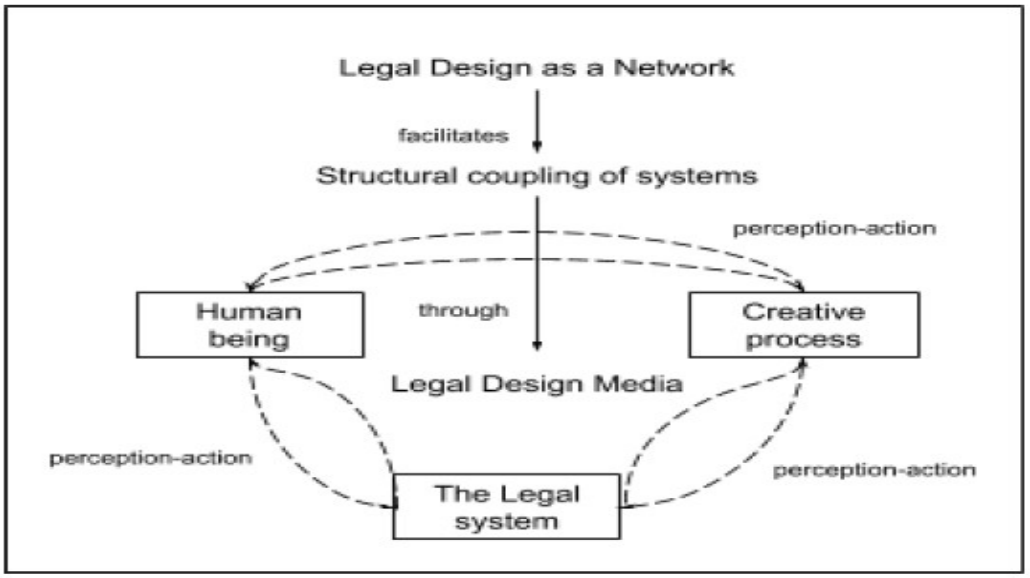

Figure 2: Legal Design as a Network (*Image by Santuber, Owoyele, Krawietz, Edelman*).

3. Privacy Design. Our field user experience survey.

Do people appreciate the prospects of Legal Design applied to Privacy documents, also in the light of the innovations introduced by the GDPR[4]?

Citizens perceive the need to simplify the visualization[5] and will appreciate the potential of legal design from the simplification of language, to the redesign of privacy documents, up to the simplification of procedures both for citizens and for professionals and operators[6].

The key point, starting from the analysis of the texts of some modules (e.g. 'information on the use of personal data' and 'privacy consent' for various activities), is to "translate" the requests - almost always perceived both by the writers and by the users as bureaucratic or slightly more - in simpler questions, also adapting to the level of understanding of the user's language.

The benefits in terms of accessibility to be reached are:

– firstly in respect of parameters such as the effectiveness of the personal data protection in all its lifecycle (Fig.3),

– above all 'active', that is, thanks to which, people are put in a real condition to know thoroughly their rights and to be able to exercise them in practice as effectively as required by the regulations.

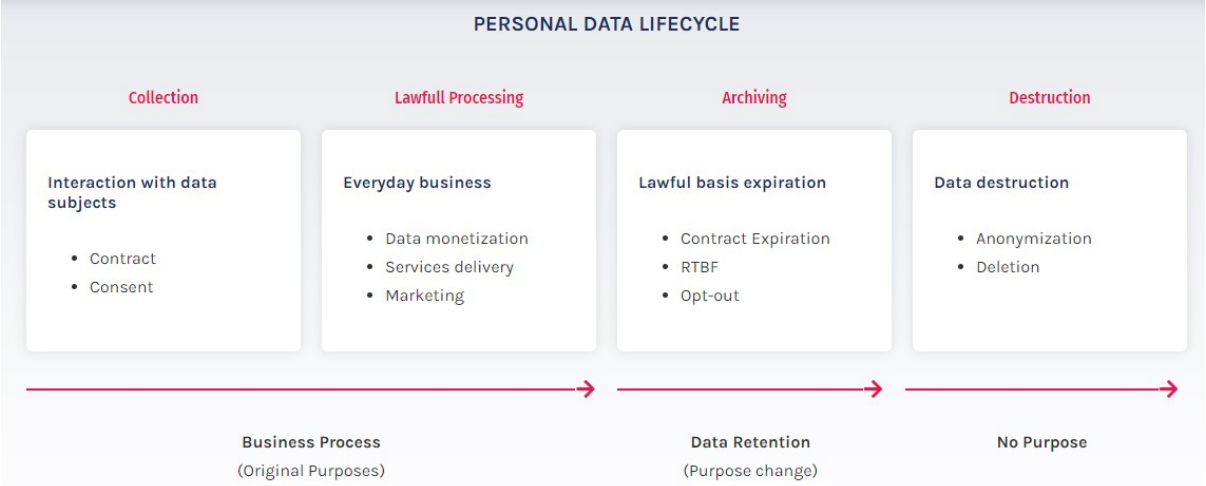

Figure 3: Personal Data Lifecycle (*source; https://dataprivacymanager.net/solutions/data-flow/*).

Often conversation about privacy communication design gets caught in a debate about oversimplification versus overcomplication. What's emerging is discussion of a 'third way' (Fig. 4), that is focused not on simplification but engaging user experiences – that are more focused on people's contexts, problems, and questions (Hagan, 2018).

[4] The General Data Protection Regulation (GDPR) governs data protection and privacy in the European Union (EU) and the European Economic Area (EEA), i.e. all 28 countries of the EU, the United Kingdom (UK), Norway, Lichtenstein, and Iceland. Since the GDPR was enacted in 2018, more than 50 other national privacy laws have been implemented, including Argentina, Australia, Brazil, Canada, Czech Republic, and Denmark. GDPR applies to companies and delineates personal rights. "Under certain conditions, the GDPR applies to companies that are not in Europe. The scope of GDPR is so wide and includes multitudes of organizations with operations outside the EEA that privacy and security experts need to understand when and how the GDPR applies outside the EU", as reported in Kelly McLendon, Andrew Rodriguez, Chris Apgar and Julia Huddleston, Privacy on the Global Stage. Examining how other countries face the growing threats to the privacy and security of personal information, and how those approaches relate to US laws, August 3, 2020. URL: https://journal.ahima.org/privacy-on-the-global-stage/.

[5] Cf. "has been proven that when we are given multiple stimuli, our response to these stimuli will be delayed. In cognitive psychology, this phenomenon is called Hick's Law.(..) That's why, normally, you shouldn't give a customer too many choices at once because it will overwhelm them", as reported in Dorian Martin, 5 Cognitive Psychology Theories that Contribute to the Quality of UX Design, UXMag.com, Article No :1878 | January 13, 2021. URL: https://uxmag.com/articles/5-cognitive-psychology-theories-that-contribute-to-the-quality-of-ux-design.

[6] Cf. "Professor Floridi in his book The Fourth Revolution: How the Infosphere is Reshaping Human Reality explains very clearly why when we say privacy, we talk about our distinctiveness from a philosophical point of view. This approach is brilliant because it clarifies that privacy is not a nice-to-have right: it is a basic need. If our personal data identify ourselves, every misuse of this information should be compared to a violation of our personality. It is a sort of violence against us, even if we do not realize it. We do not own our data: we are our data", as we can read in Davide M. Parrilli, Privacy. Design. Ethics, Jun 5, 2020. URL: https://medium.com/digital-diplomacy/privacy-design-ethics-957f949dc01.

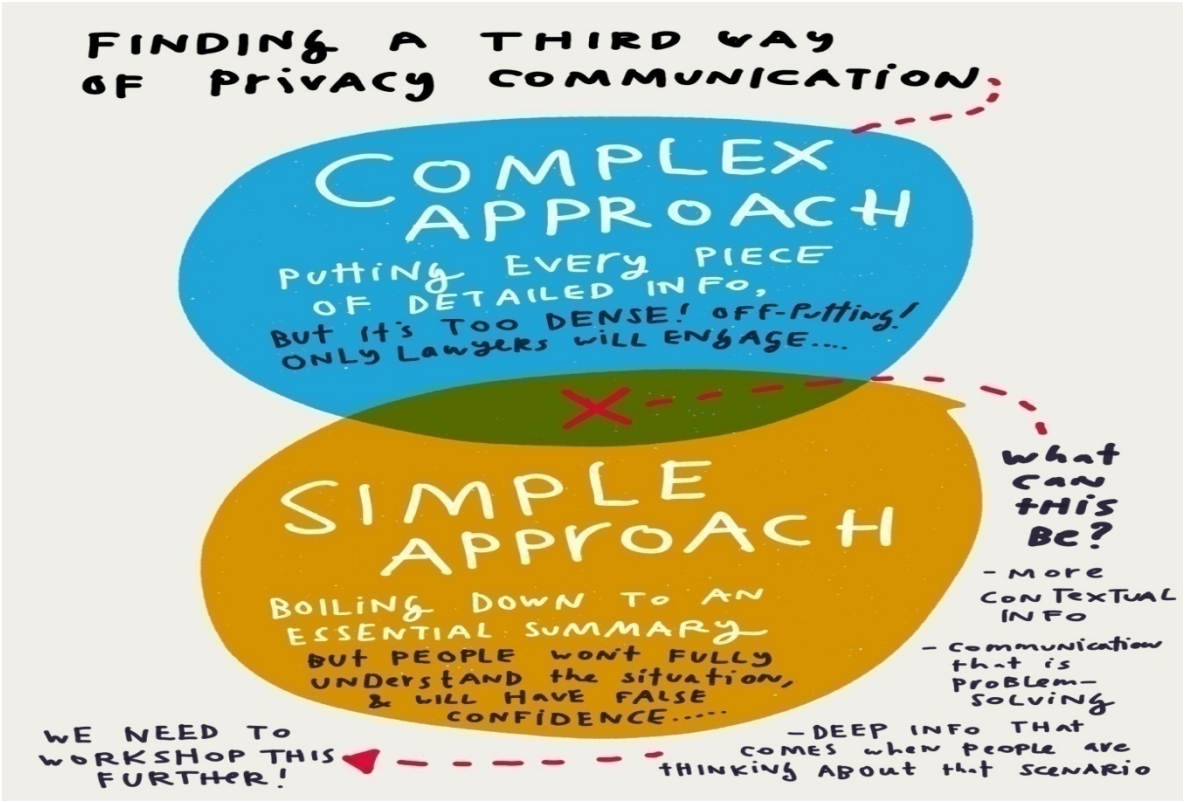

Figure 4: Finding a third way of Privacy communication (*Image by Margaret Hagan, Open Law Lab*).

With this in mind, our 'Let's Draw the Privacy of the Future' initiative participated with great success in the XXXIII edition of "Futuro Remoto, Essere 4.0", held in Naples at 'Città della Scienza'. For the first time in Italy[7], a team of professionals and experts has provided to interactively illustrate examples of privacy documents with the aim of highlighting all the texts and expressions that the ordinary citizen may find difficult to understand. "Prototypes" of redesigned documents were then shown, using visual techniques, enriched with illustrations, diagrams and icons more intuitive for the user[8].

The great success of the initiative has given the opportunity to highlight how the new design is not only graphic but reduces the information to be communicated and the vehicles to the essential in an intuitive and immediate way so as not to discourage, indeed favour the reading and understanding of their rights and how to exercise them in practice.

Here is the questionnaire administered to the participants (Fig. 5).

[7] At that moment, we knew only one scientific experiment carried out: "Our exploratory interviews involved a small sample size of around 20 people, with whom we spoke for ten to twenty minutes in person. These in-depth discussions revealed several central insights into how young, technology-literate people interact with privacy policies. We then examined these insights with our online survey, which confirmed two key findings: users have a wide variety of privacy concerns that are not clearly prioritized or universal among all users in our chosen persona type; and that these concerns do not translate into engagement with a privacy policy document on their phone, inside apps, or on technology companies' websites", as reported in Margaret Hagan, User-Centered Privacy Communication Design, Stanford Law School/d.school, Symposium on Usable Privacy and Security (SOUPS) 2016, June 22-24, 2016, Denver, Colorado. Page 3. URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2981075.

[8] For more details see Sergio Guida, Legal Design & Visual Law: prospettive in Italia anche alla luce delle novità introdotte dal GDPR, Data Protection Law.it, ISSN 2611-6456, February 6, 2020. URL: https://www.dataprotectionlaw.it/2020/02/06/legal-design-visual-law-gdpr/.

Legal Design & Visual Law. Let's draw the privacy of the future.
User experience survey questionnaire

Section A		Privacy policy features (1)	Strongly agree/ Agree	Neither agree or disagree	Absolute disagree/ Disagree	Notes and Comments
Perceived readability	1	• it is written in a "legalese" language, which is unclear				
Perceived readability	2	• contains terms that are confusing				
Perceived readability	3	• it's difficult to understand				
Perceived readability	4	• is formulated in an incomprehensible way				

Section B		Privacy policy features (2)	Yes	I am not sure	No	Notes and Comments
Actual readability	5	• your data can be shared with third parties				
Actual readability	6	• your data can be used for promotional purposes				
Actual readability	7	• your data is always accessible				
Actual readability	8	• the Data Controller's staff can access your data only with your consent				
Actual readability	9	• after the retention period (How long?), your data will be deleted				

Section C		Privacy policy features (3)	Strongly agree/ Agree	Neither agree or disagree	Absolute disagree/ Disagree	Notes and Comments
Perceived usability	10	• the policy ensures that my data will not be used improperly				
Perceived usability	11	• the policy reflects the Data Controller's commitment to privacy				
Perceived usability	12	• the policy states that my data will be treated with due confidentiality				
Confidence	13	• I believe that the Controller will do his best to help me if necessary (Benevolence)				
Confidence	14	• I believe that the Data Controller will keep its privacy commitments (Integrity)				
Data perceived as:		• considering everything, I believe that the data that are the subject of this notice are:				
personal	15	- personal data				
'sensitive'	16	- sensitive / particular data				
Security	17	• the policy explains the actions taken to guarantee the security of the personal data collected				
Security	18	•the policy confirms that no data collected will be provided to third parties without my permission (with the exception of obligations deriving from laws, provisions, etc.)				
Security	19	• the Controller uses suitable technologies to protect my data				
Sanctions listed	20	• the policy illustrates that there are legal provisions that sanction violations of the privacy regulations				
Sanctions enforcement	21	• the policy illustrates that strong legal actions will be taken when the processed data system is violated (data breach)				

Section D		While signing the consent form I thought/understood:	Strongly agree/ Agree	Neither agree or disagree	Absolute disagree/ Disagree	Notes and Comments
Perceived usability	22	• to agree exactly on what was written on the consent form				
Perceived usability	23	• what would have happened if I had not signed the consent form				
Perceived usability	24	• that the video surveillance images, which also concern me, can be used by the judicial authorities or police				
Perceived usability	25	• that my details will be communicated to the Police Headquarters for public safety purposes				
Perceived usability	26	• I'm not sure what I was accepting				

Figure 5: Questionnaire for our field 'User experience survey'.

The results of the interviews (for a total of 136), as well as their feedback, comments, ideas, suggestions, will be detailed in a further research. At the moment, I can indicate the main aggregate results (Fig. 6).

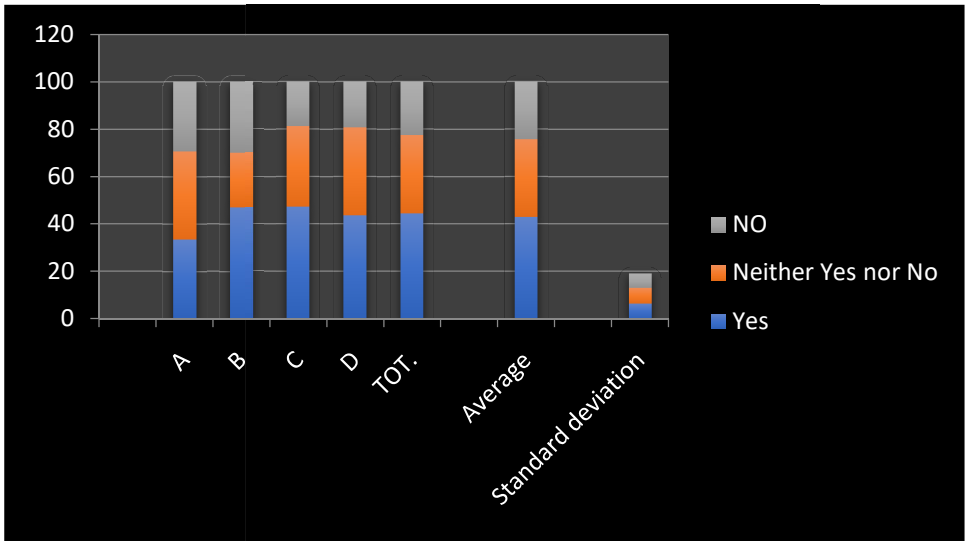

Figure 6: Questionnaire responses chart (Summary by sections).

Lessons learned

1. Multidisciplinary skills are very important in the design and implementation of highly innovative products and services based on legal design, aimed at maximizing user experience (Soni, 2018).

2. Particular attention has to be given to 'weak subjects', for whom, in addition to the fundamental objective of allowing full accessibility and usability of privacy rights, the highest objective would be to bring out and enhance the enormous patrimony in terms of Human Capital (Botev et al., OECD, 2019) which more often in their case lies latent and unexpressed.

3. Policies simplification of access to legal protections in order to make them effective and to increase the trust of users in the processing of data which, in any case, have a significant impact on the individual's fundamental rights.

4. Clarity and simplification are also fundamental in contractual relationships between private individuals and for access to goods and services, in order to reduce obstacles to understanding procedures and processes and within the framework of a renewed relationship of trust between citizens and with institutions.

On the basis of these results it will be possible to improve the effectiveness of existing privacy regulations and to enhance access to safeguards, e.g. through a chatbot (and eventually personalized assistance services) ranging between rights, user experience and educational issues[9].

[9] Cf. "Educational or learning goals are inspired by a specific learning theory, such as the already cited work by Bloom or Kolb who emphasized concrete experience, active experimentation, reflective observation, and abstract conceptualization. A meaningful learning process is characterized by the presence of feedback, as giving (and receiving) feedback is essential to understand how close learners are to the defined learning goals. Feedback, together with debriefing are regarded as the most important element for maximizing the learning process, as they guide learners through a reflective process about their learning, offer a space for giving personal meaning to the learning experience, and help to relate this learning experience to real-life contexts", as we can read in Michela Ponticorvo, Elena Dell'Aquila, Davide Marocco, Orazio Miglino, Situated Psychological Agents: A Methodology for Educational Games, Applied Sciences 9(22):4887 November 2019, DOI:10.3390/app9224887, page 7. URL: https://www.researchgate.net/publication/337268184_Situated_Psychological_Agents_A_Methodology_for_Educational_Games.

4. Our 'Privacy Chatbot'

Chatbots have had a long history of use as pedagogical agents in educational settings. From the early 1970s, pedagogical agents within digital learning environments known as Intelligent Tutoring Systems have been developed (Laurillard, 2013). Conversational pedagogical agents use artificial intelligence techniques to enhance and personalize automation in teaching. The design and research knowledge are important in developing engaging, useful, and valuable pedagogical agents that not only make the most of technological advancements, but also understand emotional, cognitive, and social educational concerns (Gulz, Haake, Silvervarg, Sjoden, & Veletsianos, 2011). In addition, conversational agents have been built into software and devices. Useful chatbot systems can provide benefits of instant availability and ability to respond naturally through a conversational interface with the same advantages as an interview. Additionally, chatbots demonstrate the ability to create easygoing interactions with users so that they can be leveraged to support engagement, as well as setting out goals, strategies and outcomes of learning and training (Pappas, 2014).

Our stage and its properties

So the time has come to schematically consider the 'Structural properties' of the 'stage'[10] where the intervention setting takes place (Chimera, Baim, 2010), as described in Figure 7.

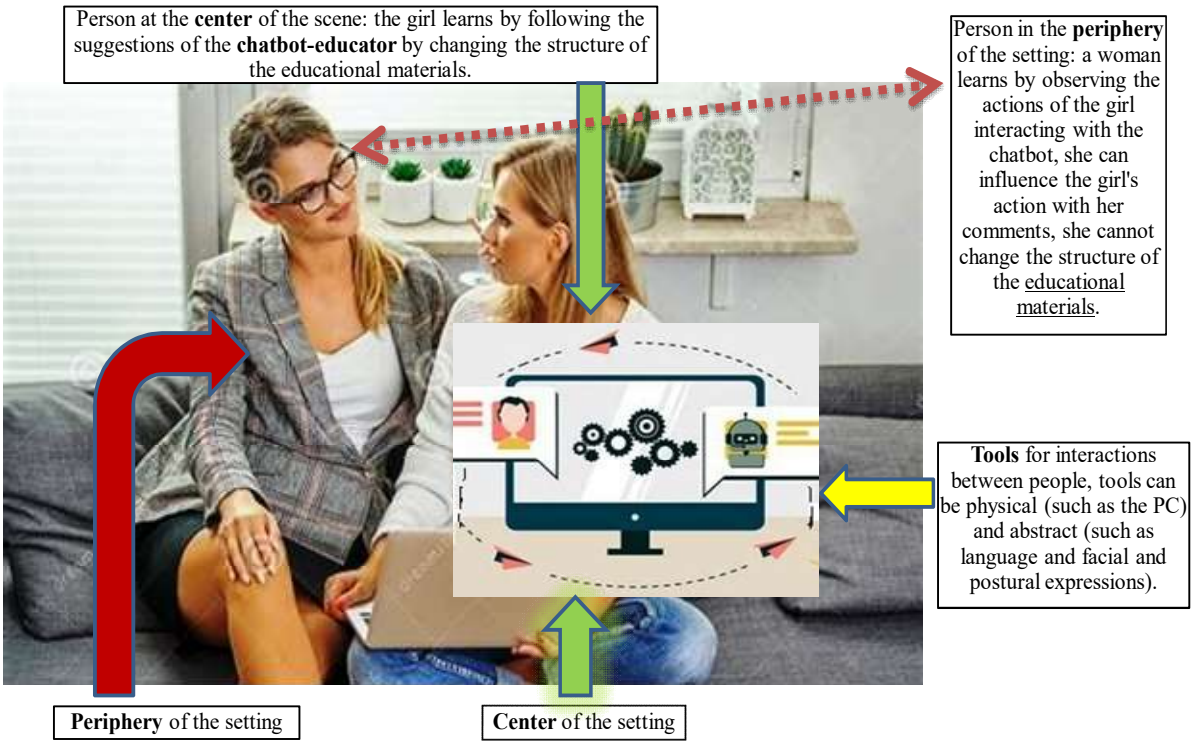

Figure 7: Teatral representation (*ref. footnote 10*) of the setting in a typical situation of a web research: a woman and a friend of hers enter an e-commerce website. Immediately, she has to take decisions about the Privacy policy as disclosed. She can start by dialoguing with the 'educational chatbot' installed on her PC.

[10] The analogy between a setting of psychological intervention and the techniques of the "commedia dell'arte" was already developed by the famous psycho-sociologist Jacob Moreno who used it in psychosocial intervention techniques called 'psycho-drama', as extensively explained in the slides of our Master's course "Artificial Intelligence Systems and Technologies for Psychology Interventions". In Figures 7 and 8 I made my own elaborations starting from a similar scene contained in an example provided in the Lessons of the Course, while in Figure 9 I inserted a translation of the original slides.

As regards 'Functional properties', the canvas defines the roles of the characters who enter the scene (on stage) in a very similar way to the definition of protocols and guidelines contemplated in the definition of a psychological intervention setting.

Figure 8 depicts an example of developing a flow chart of a Psychodrama session (or role-playing game) applied in the context described in the previous figure 7: the boxes show very general macro-activities but useful to distinguish the various phases in which the role play takes place. Some sections of this quasi-formalism will be expressed in formal terms and represent the basis for developing our projected chatbot.

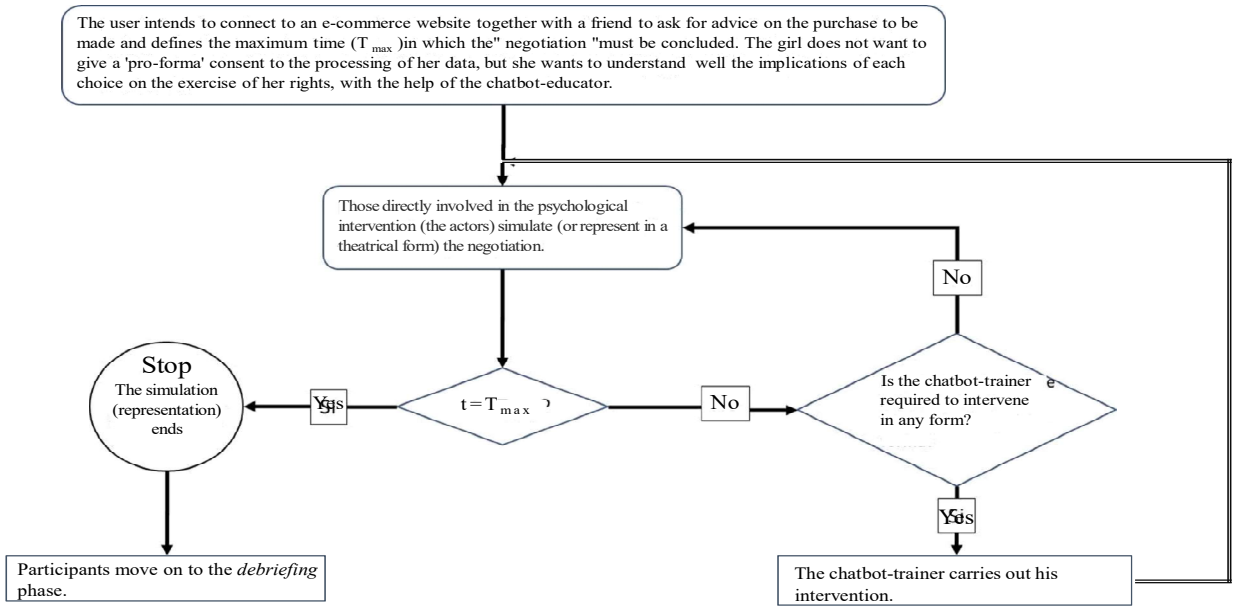

Figure 8: Operating flow-chart for the situation represented in our setting (*ref. footnote 10*).

Pillars for modeling (upcoming)

Figure 9 presents the two phases in which we can describe the path that goes from the almost intuitive conception of some technological support to be included in a given setting of psychological intervention to its implementation and use.

In figure 9 *Phase a* (design and implementation of a technology) is divided into three distinct steps, while *Phase b* (release, use and evaluation of the insertion of the technological support) is presented as a single body.

The first step of Phase a will be dedicated in the first instance to the qualitative description of the structural properties of the psychological intervention setting, also using graphic representations (such as shown in previous figures) and to the qualitative definition and intuitive of the functional properties of the setting also through a diagram of non-algortimic flows as presented before.

The second step of phase (a) involves the detailed and formal design of the structural and functional components of the setting that you want to enhance / replace with the technology we are going to develop (educational chatbot). In this step, for example, it will be necessary to develop an algorithmic flow diagram of the functional properties of the setting that is to be transformed into the concrete technology.

In the third step it will be necessary to choose the IT tools (programming languages) and hardware (computer) necessary for the realization of the previously designed technological solutions. Generally,

before reaching the final stabilization of a project, several iterative cycles are required between the activities of step 2 and step 3.

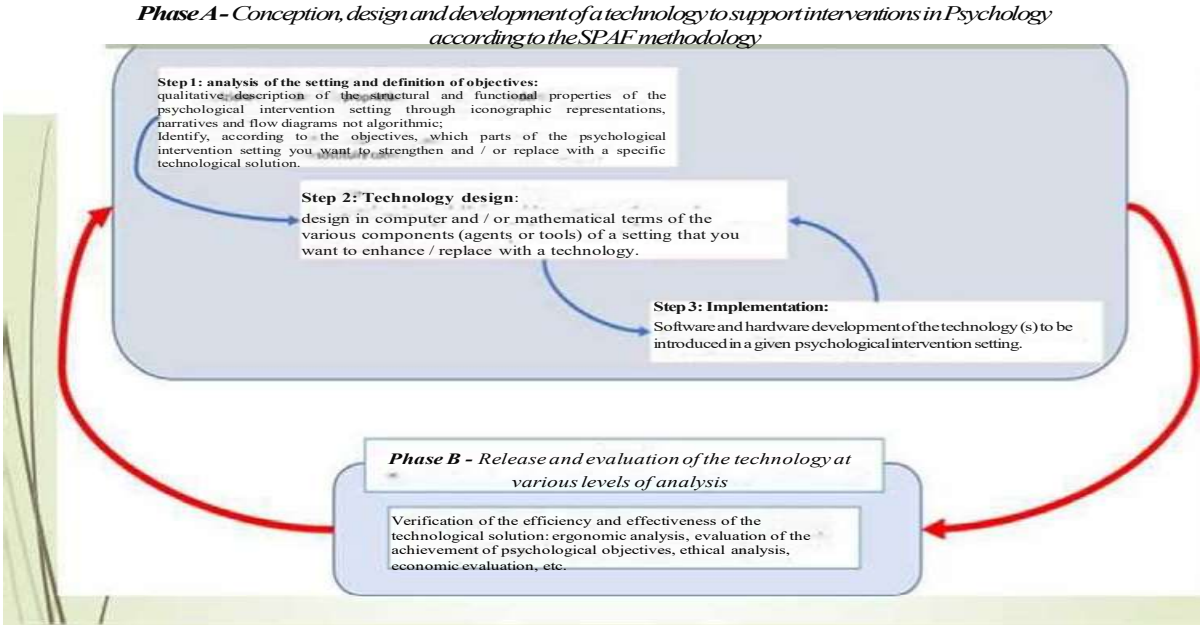

Figure 9: The two phases for the design/implementation of a technology to be included in a psychological intervention setting (phase A) and provision and evaluation of the technological solution actually developed (phase B). The SPAF (Situated Pychological Agents Framework) design methodology applies exclusively to phase A (*ref. footnote 10*).

Main technical recall

Chatbots use a dialogue system to have a conversation with a human. There are a few steps a chatbot goes through to process human information:

The first step is converting human input into an understandable context for the chatbot. This is done through input recognizers and decoders, which can analyze speech, text and even gestures.

The next step is applying Natural Language Processing (NLP) to analyze the plain text and search for semantics (Callahan, 2021). After the tasks are solved the output manager translates the solution into 'human like output'.

However, these natural responses require a great amount of learning time and data to be able to learn the vast amount of possible inputs. The training will prove if the bots are able to handle the more challenging issues that are normally posed by users, just like in our field survey.

The prototype of my educational chatbot, as so far only imagined, will have the strategic goals of finding the right balance between the different needs to be reconciled, namely rights to be protected, user experience to be maximized and training that is truly effective for the user's growth, also and above all as a citizen.

5. Acknowledgements

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