6th Conference on Computation, Communication, Aesthetics & X
Madrid, Spain

Gordan Kreković [1]
gordank@gmail.com

Antonio Pošćić [1]
antonio.poscic@gmail.com

Stefan Manojlović [2]
stefan.manojlovic@gmail.com

[1] Unaffiliated, Zagreb, Croatia

[2] Unaffiliated, Dracthen, Netherlands

Chatbots as a Novel Interactive Medium for Poetry

Keywords: Conversational Agents; Chatbots; Poetry; Medium.

Abstract:

As emerging infrastructural entities that enable human-computer conversation, chatbots open a plethora of possibilities in the mediation of poetic content. The aim of this paper is to systematically explore various implications that arise from the conceptual role and technical possibilities of chatbots. Their conversational nature is a key differentiator in an assembly of existing media spaces that enables phenomena such as dynamism, non-linearity, and inverse intentions, while it also modifies the roles of medium, artist, and user.

1. INTRODUCTION

The essential and inherent role of mediation between poetic content and the reader (or in broader sense — user, since the term user is not perceptually specific) is to articulate, convey, and transform the poetic content. In comparison to other media, conversational agents or chatbots radically enrich this role by opening a wide range of expressive and interactive possibilities related to the conversational nature of their interfaces. Interactivity 'is the refinement of a very specific kind of engagement with art that positioned the participant or visitor as an integral part of the creative process' (Tofts 2005) and is one of the conditions that differentiates new from traditional media (Stuart 2009). While interactivity is present, at least as a possibility, in other forms of electronic literature, chatbots extend the penetration of interactive qualities deeply into the underlying process of articulation and transformation of the poetic content being mediated through conversational interfaces. A conversational medium enables creating a broader context through dynamisms, non-linearity of human-computer communication with possible indeterminacy, and adaptability of the content in relation with users' actions (or the lack of them).

In order to observe how chatbots serve as a new medium for poetry, our aim is to explore different implications and possibilities for poetic expression opened by various features which are either specific for conversational interfaces, or entail unique implications in combination with other features. Almost without exception, all of those specifics arise from conversation as a mediation paradigm. An ability to convey poetic content through context-dependent and dynamic conversations puts both the user and the artists in new position. Users become an equal actor in the human-medium relation with a plethora of possibilities to engage, influence, and express themselves, while the role of the artists extend to creating the media space along with the poetic content.

The aim is, therefore, to systematically discuss phenomena that come from technical possibilities and conceptual roles of conversational agents without imposing any particular guideline and qualification for the artistic practice. Particular consequences of various design choices on aesthetical, stylistical, empirical, contextual, and conceptual aspects of a poetry chatbot are not a part of this general discussion, as they need to be built around specific artistic practice or individual work. While conversational interfaces can rely on different types of communication using text, speech, and graphical interfaces, this discussion focus on textual conversational interfaces, but in some aspects it can be naturally extended to other communication channels.

2. THE INTRICACIES OF THE MEDIUM

Depending on context and perspective, the concept of medium can adopt different characteristics and facets. On the lowest level, a medium can be interpreted and explained as a channel for communication and transmission of content in information theory (Shannon 1949). When discussing this approach, we're not concerned with the semantics nor epistemology of the transmitted content, and instead observe only the physical interactions between signal (content) and channel noise (interference). Then, expanding on this idea, we see medium become a more complex and encompassing concept. In media studies, for example, the medium is observed through the contents it disseminates, its historical significance, and its effects on socio-political environments (Innis 1950). In this field it is often posited that all human artefacts and technologies are to be considered media (McLuhan 1964). Finally, building on top of media theorists or holding contrarian positions, views such as Michel Serre's pure mediality and fascination with parasitic noise (Serres 1982) have also been identified as relevant. To better understand the position of a relatively recent, high level, and abstract medium such as the one explored in this

paper—chatbots for poetry—and its effects on the interaction between users and technology, in the following two subchapters we provide a short overview of the historical, philosophical, and aesthetical thoughts on the role of medium in art in general and especially when the content it carries can be classified as poetry.

2.1. Medium in art

The relationship between medium and art is crucial and multifaceted. Art without medium might not exist, but the exact definition of medium in the context of art is elusive, its ontology and epistemology inherently complex. The role of the medium is thus placed on a scale from passivity and distraction to an integral function (Davies 2003). For some, medium is interpreted in an inactive role, as nothing but the physical material through which art is conveyed (Lewitt 1967). Stone, metal, and gas particles that make up the air—the characteristics of the medium are well known and defined but aesthetically irrelevant and any of their uses with the end of implementing artistic ideas is separate and isolated (Collingwood 1938). In this sense, an art medium becomes completely passive and inert, its unwelcome characteristics—brittleness of stone, imperfections in acoustics—seen as nothing but noise that inhibits the artist in the creation of art.

Continuing from this, some further minimize the role of the medium and argue that the medium is completely irrelevant and in some ways detrimental to the process of fleshing out artistic ideas (Beardsley 1958). These ideas, they posit, are inherently intrinsic and belong to the artist's internal processes, while its manifestations in the physical world in the form of artwork are imperfect facsimiles. Thus, any chosen medium will always provide only a flawed approximation of the artwork itself.

A layer above or parallel to this understanding we find the concept of medium as acknowledging of the characteristics of the medium itself as active participants in the creative process and final artwork. In this line of thought, manipulations of the medium and the conceptual framework built around them—tone scales, choreographies, painting techniques—become part of the artwork itself and influence the artist in the process of creation (Wollheim 1980). We can say that in this context the medium becomes an inextricable part of the artwork itself.

Finally, in a third layer, medium in art becomes not only the medium used to implement a piece of art, but also includes the way the which the artwork is conveyed to others (Danto 1981). Here an artwork is transformed into an "aesthetic object" whose subjective interpretation is not only impacted by the characteristics of the medium used during creation, but also the characteristics of the medium used during "consumption". A painting might yield vastly different reactions whether viewed in an art gallery or on a computer screen. In this case, the characteristics of one medium such as transmitted video signals override the characteristics of the original medium. By observing a painting through a computer screen, the observer is not aware of imperfections in the painting, ridges left by brushstrokes, etc. Similarly, different recording and reproduction techniques can significantly alter the original music. These patterns have often been intentionally subverted by artists (Dixon 2007).

This final notion is exacerbated by the onset of the digital age which by itself is a medium that transforms other mediums. Various artworks (Harper 2012) explore this relationship that is inherent and natural to art consumption in the contemporary world. Instead of assuming any form of the digital medium to be passive and focusing on minimizing its "noise", artists explore how enhancements in the digital medium distort and change the original art with unexpected and innovative results.

Stemming from the above, we approach a concept of hypermediality that is a common area of experimentation. In it, we see combinations of different media which birth new and novel media. Here some theorists posit that the combination of dif-

ferent media is warranted only if the result is not achievable in a single medium and if the combination of media produces something unique (Arnheim 1938).

2.2. Medium in poetry

The discussion about the role of medium in poetry obviously builds on the arguments of medium and art in general with some additional specificities. Historically, poetry has been closely tied to the textual medium while recent works explore, for example, poetry as non-textual and belonging to the sonic (Minarelli 2001).

While these novel ways of conducing and projecting poetry, specifically chatbots, will be explored in the following chapters, here we take a look at the way that textuality defined poetry. By looking closely, we can see that the relationship is not as trivial and straightforward as expected. As a simple example, one can observe how notation systems or languages — which should be considered part of the medium and not the poem itself — influence both the creative process and its final outcome (Hanauer 2010). For example, a poem written using Kanji will by default impose a different structure and flow then if written in Latin script. Similarly, poems written in one language and then translated to other languages often require the re-engagement of the creative process as the literal and direct translations can rarely — due to semantic and syntactical elements and differences between languages — convey the originally intended meaning.

Through the years, this inter- and extratextuality of poetry's medium was often intentionally misused and bent to achieve effects which were, in some way, completely outside the textual and crossing into interventions on the physical medium that holds the text. Concrete poetry, specifically Guillaume Apollinaire's poems (Bohn 1993), even if rooted in the traditional text-on-paper form, actually transcend that medium into a rudimentary form of hyper- and intermediality. Here the poems fulfill a literary function, but the arrangement of text also suggests a visual dimension. The medium has been modified and transformed into something new, satisfying Arnheim's criteria of acceptance.

Similarly, Marinetti's futuristic poems (Marinetti 2016) contain in them large sections of the onomatopoeic, suggesting sounds which, while not exhibited in the original medium, are created and transposed to non-tangible artifacts in the mind of the reader. This is also an example of how art, or in this case poetry, can exist even outside an a priori determined medium. Here the final medium is manifested during the act of reading and interpretation rather during creation.

Until the rise of digital media and novel ways of conveying and generating poetry using these tools, postmodern poets such as Allan Ginsberg stayed within the confines defined by concretism in therms of hypermediality, and instead insisted on redefining and recontextualizing the poetry itself by focusing on arrangements of words, sentences, etc. not in terms of their visual structure, but through their meanings and connections with extrinsic elements (Hungerford 2005).

3. CONVERSATIONAL AGENTS AS THE MEDIUM FOR POETRY

3.1. Introduction to conversational agents

Just as humans use languages for communication with other members of their species, they want to use the same natural languages to communicate with computers. This is the main motivation behind the creation and development of bots.

Conversational agents are defined as characters enacted by the computer which acts on behalf of the user in a virtual (computer-based) environment. Some agents are represented as smart assistants and are able to carry out mundane tasks like scheduling and searching for help in different spectrums by giving advice or recom-

mendations (Laurel 1990). Others act as content delivery computational systems, which can handle and deliver customized information, connected closely to the role of a lifestyle assistant.

These agents make the computer more human-like by entertaining, approaching, understanding, and engaging with people (Catrambone 2012). Their aim is to somehow simulate human behaviour in dialogue management and understanding, as well as human reasoning capabilities (Augello 2011). Agents have thus become a predominant area of research and development in such human computer interfaces. And within that field, it's conversational agents which are the most interesting because of their ability to interact with humans in a conversational manner via text or speech (King 1996; Hingston 2012).

A conversational agent, also defined as a chatbot (or chat-bot, dialogue system, IM bot, and chatterbot) is a software system program that interacts with the user using natural language. They were first discovered in 1966 when Weizenbaum's early program Eliza, built at MIT, was used to emulate a psychotherapist. When interacting with it, people were convinced their interactions were with a real person rather than a computer program. It used simple pattern matching and mostly returned users sentences in the form of questions. The common term given afterwards to these autonomous software programs was chatterbots, chat-bots or "bots" for short (Hingston 2012).

However bots are more than just instant messaging platforms or channels, browsed by users on computational devices. When mixing complex systems into our culture, such technology can impact our way of learning and discovering. For example, one such system could remind its owner to top-up his card when approaching a bus or shine a light on hyped artists when passing by a museum. Whichever modus of operation we choose, it's clear that these systems have the potential to change the way we deal with the world on a daily basis. Similarly, such systems can support people in delivering a unique experience when it comes to poetry. Humans could navigate through art and history, accessing all kinds of information within a conversation. Poems, interpretations, comments, biography, etc. can now become an integrated part of the poetical experience, lead by conversational agents.

3.2. Specifics of the medium

In order to build towards a comprehensive overview of chatbots as a novel interface, in this section we discuss possibilities for poetic expression that arise from technical features and conceptual roles of conversational agents forming unique implications in mediating poetic content.

3.2.1. Selection and order

The first manifestation of an enriched role of chatbots as a medium is the possibility for users to influence the selection and order of poems. Printed forms rigidly imply a fixed order which represents a high-level composition of a poetry collection or book. Digital media idiomatically extend this paradigm — they can mimic the fixed order of poems, they can support a predefined compositional aspect in the order, they can provide a sense of positions and relations, and they certainly can rely on a broader range of readers' actions and data provided either implicitly or explicitly. A few practical examples include different styles of navigation through poems on websites or mobile apps using categories (Poem Hunter, Pocket poetry, Wings-Poems), the possibility to search poems (POETRY app from the Poetry Foundation), and non-deterministic selection (Daily Haiku, Poem Flow). Chatbots additionally contribute to the expectation of choice and control. In a typical textual conversational interface, poems cannot appear in parallel, but sequentially, so a certain reading order is thereby necessary and expected to be influenced through the conversation. Such an influ-

ence can be manifested on several levels — from direct navigation through selection of categories or attributes of a poem, to implicit creation of order based on data collected through previous conversations.

The expressive media space of chatbots can be observed as an evolution and combination of elements existing either in the traditional (text, images) or digital interfaces (graphical controls) within the conversational paradigm. This heterogenous synergy named hypermediacy by Ted Nelson (Nelson 1965) almost consistently represents a distinction between new and traditional media, as new media assemble traditional media spaces and make users aware and even delighted by the media itself (Bolter 1999). Hypermediacy in chatbots is a result of combining textual conversational interfaces with elements that are more idiomatic to graphical user interfaces, such as icons, images, videos, buttons, sliders, input fields, and other graphical controls. This could be arbitrarily extended to voice control and various gestural modalities, but for the purpose of consistency and without reducing the generality in our analysis, we focus on textual chatbots with graphical elements.

In the context of navigating through the poetic content, hypermediacy by its definition opens two important questions: 1) how to synthesize a media space for navigation through poems and selecting them, and 2) how visible should the features of the medium be. The first question regarding media space synthesis touches upon a hierarchy of communicational abstraction in chatbots. On the lowest level is the basic, immediate, closed-type communication achieved using simple means, such as a limited number of buttons that represent options among which the user can choose. Such an approach can allow direct selection of poems through a list of questions regarding the categories or attributes of the poem. This example demonstrates how the lowest level of the hierarchy of communicational abstraction ignores the context and imposes limited choices. Higher levels of the communicational abstraction usually require exponentially more advanced technology and conceptual reasoning behind the chatbot to achieve open communication and to take the context in regard. The next three examples illustrate navigational possibilities on higher abstraction levels in a rising order of communicational abstraction. They also discuss the visibility of the medium's features.

Example 1: After each poem, the chatbot suggests several poems from which the user can choose one to be displayed next. The user can select the poem using buttons or other dedicated graphical elements. Communication is still closed and options are limited, but some basic contextual dimensions are taken into account while suggesting following poems. Such a suggestion can be done based on the attributes of the current poem (style, author, motives, mood, etc.) or by collaborative methods (popularity and selection of other users). Since the selection is explicit using graphical elements and requires the user's active engagement, this is the medium's feature that's visible to the user. Borrowed from other digital forms (such as mobile applications and web), the manual selection, even though it is enriched with automatic suggestions, will not create an element of surprise or delightedness by the medium itself.

Example 2: After each poem, the user can write an association or a motive which the chatbot will take into account when selecting the next poem for reading. The communication now becomes more open, even though it is still limited since the user needs to provide an answer to a specific question without the possibility of changing the direction of the communication. Natural-language processing (NLP), a field of computer science, provides proven techniques that can be used in this case to interpret intentions and sentiments expressed by the user (Bates, 1995). The predefined context of a specific question simplifies the general problem of understanding a natural-language in a conversational situation and for that reason this example does not illustrate an abstractional level on top of the hierarchy. Poem selection using open communication is less visible than in the previous example, but the user

can be aware of it, because of the specific question and direct reaction of the chatbot to the answer. If the results are relevant, this feature can bring an element of delightedness to the user experience.

Example 3: The chatbot occasionally asks the users to comment poems, to name their favourite poets, to write about their current mood, or, in general, to engage in conversations of broader topics. All the user data collected during the course of time can be processed in order to extrapolate new information and induct some conclusions about the users which are on a more general level than answers to specific questions. The data help the chatbot position itself in a related point in the space of contextual dimensions and select the most relevant poem. The user's direct engagement in selecting poems is invisible, but when the user is aware that the selection is a result of underlying mechanisms, it can be impressive, at least while the medium is still new and not a part of everyday life.

The selection and order of poems seems as a trifling applicational consequence of a medium, but in case of chatbots it can significantly shape user experience and implicitly absorb many underlying design choices.

3.2.2. Inverse intentions

Conversational interfaces enable communication between the user and the system in both directions and the same should also apply to the act of initiating a conversation. If a conversation mediates poetic content, initiation of a conversation may represent an invitation to read. Thereby, initiation of a conversation can be compared to analogous "inviting" characteristics for other media.

Printed poetry, characterized by its affordances, is passively inviting by its materialized appearance, while a desire to read with a consequent action is triggered by the reader. In contrast, some digital media, including mobile applications and chatbots, have a capability to invite users actively. A specific time of day, inactivity period, or any other event, can trigger an initiation from the medium's side which can be manifested as a notification or a message (e.g. e-mail, SMS, or Facebook message). Such a technical possibility of digital media and its conceptual implication represent a radically different paradigm in comparison to traditional media, since the intention can be inverted.

A specific characteristic of chatbots is their conversational nature that makes the act of initiating conversation something intuitive, since conversations are always initiated by one of the involved sides. While conversations can carry the poetic content from their beginning, this does not need to be the exclusive case. Conversations, whether initiated by readers or conversational agents, can entirely or partly serve another purpose, such as to inform users, entertain them, remind them to read, ask them questions and thereby learn more about their preferences, etc. Limitless conversation topics further pair with limitless tone of voice, message length and frequency, aesthetic characteristics of the text, and many other aspects of verbal expression (Agnese 2011). In that sense, inverse intentions exceed the basic mechanism of sending simple push notifications that invite users to read. They are about creating a meaningful and enriching experience that can be intentionally designed to accompany and amplify poetic content.

3.2.3. Interactive artistic expression

In the context of poetry, both traditional and new media posses some inherent or intentional characteristics which allow user engagement beyond influencing the reading choice and order. One such intriguing and accidental possibility that allows readers' to actively intervene in the printed medium is marginalia — a phenomenon of using page margins to write notations. Marginalia is a topic of research (Gazan,

2008) and inspiration for artistic work. American poet Billy Collins explored this phenomenon in his poem *Marginalia* (Collins 1996), while a drawing robot called Marginalia Machine reproduces archival margin notes from the Bloodaxe Archive of poetry (Schofield, 2015).

Readers' engagement on digital poetry platforms is more often intentional and even encouraged. Possibilities to comment, share, label, score, and like the poems enable the modalities of intervention which are idiomatic to the digital media. Subsets of those possibilities are present in most of the aforementioned mobile applications for poetry. Adding additional value to personal notes, markings, or local actions can be brought by the social element. Sharing poems directly to social networks from poetry applications is one of the standard features. Moreover, social networks serve as a direct media for poetic content in different forms. Poetic texts appear on Facebook and Twitter, poetry turned into images is published on Instagram and Tumblr, audio recordings are presented on Anchor, and audiovisual poetry can be found on YouTube and Vimeo. One of the most prominent characteristics of these platforms, that capture more and more of the users' time, are related to the possibility of engaging users both individually and socially.

Chatbots extend the role and meaning of user engagement — conversation — as it became a fundamental aspect of the medium. Engagements through communication with chatbots turn into a modality that is virtually unlimited in its polivalency and comparable to the expressive possibilities of the communication itself. Therefore, it can be observed within the previously established framework that considers levels of communicational abstraction and visibility. As higher levels are characterised by more advanced context awareness and communicational abilities of the chatbot, it provides more possibilities for users to express themselves and write notes, marks, or even verses that the chatbot can use to respond, to select poems in the future, or to adapt its tone of communication. While this consideration may seem too distant from the real-world artistic practice and applications, it should be an integral part of the design steps for every poetry chatbot, as the two-way relation between the user and the chatbot is instinctive and fundamental for this type of user interface. Therefore, regardless of the underlying process of conceptualization and design of the communication, users will intuitively try to engage and form their experiences based on the given conversation. In that light, designing the conversation is of the same importance as writing the poetry itself which implies that the medium imposes a certain additional requirement to the creator of the chatbot.

Finally, we must consider how chatbots figure in the broader context of a contemporary digital society. As another technology that lives within this system, it is subject to misuse and can be plagued by issues that affect society's other aspects. Phenomena like Internet addiction and attention economy can translate to chatbots both in a general sense and when used as media for poetry. For the latter, chatbot systems need to be designed so not to exacerbate the aforementioned phenomena and should instead encourage healthier behavior in users. Authors and researchers championing chatbots must thus keep in mind potential negative sides of the technology and present solutions that prevent or minimize them. This is a very complex, interdisciplinary subject that needs to be investigated alongside the core development of chatbots.

3.2.4. Design beyond visuality

Perceptive and even synaesthetic possibilities of a literary artefact are related to its materiality and, transitively, the medium that brings the poetic content into a visual, aural, tactile, or multimodal manifestation. Creating a medium therefore ecompasses desinging all of its perceivable expressions — whether they come in the form of text, graphics, sound, or a physical object. The act of designing a conversational bot fundamentally contrasts with textual, graphical, and sound design, even though the

conversation is ultimately manifested as text, graphics, or speech. Conversations are dynamic in their nature and creating conversations means composing their inner dynamism interrelated with the content. The following questions are just a few of many specific topics related to the conversation design for chatbots: (1) time and frequency of conversations started by the chatbot, (2) number of atomic messages and complexity (i.e. possible situations) in each conversation, (3) frequency and timing of atomic messages within the conversation which is very important if a poem is sent in a sequence of multiple messages as it affects the rhythm of displaying lines and verses, (4) types of the input form (predefined buttons, open text, or a combination), (5) content and tone of messages that do not contain poems, etc. In order to achieve a certain user experience, all of these aspects need to be considered and "designed".

However, design choices in this context do not mean fixed and deterministic decisions and they should be observed as context-dependent systems of working principles instead. For example, frequency of conversations started by the chatbot can, but may not be fixed to four conversations a week, yet it could also depend on various dimensions related to the user (such as user activity and user preferences), content (e.g. some topics may be initiated more often), and external conditions (e.g. day in a week or weather forecast). Designing a chatbot therefore means designing the dynamism of different aspects of human-computer conversation.

3.2.5. Accompanying texts

In the case of textual chatbots with user interfaces modeled on instant messages, conversations are the only mean of interaction with the virtual agent. They deliver the poetic content, but they also may have other purposes — to introduce the user with the system, to enable the selection of poems, to provide additional information, etc. Chatbots designed only to send poems would not rely on conversations and transitively would lose all the implications of the conversational interface mediating the poetic content. Therefore, conversations that do not carry exclusively poetic content are an expected part of the communicational corpus of the chatbot and share the same media space with the poetic content. Expanding on this idea, that means that non-poetic messages (i.e. accompanying texts) could be designed in a way that their style, vocabulary, aesthetics, and tone of voice have a designated relation with the poetic content. Such a relation is a question of the artistic intention and can be anything from match to contrast.

Accompanying texts could be seen as embodying experts, who guide their users through an iterative journey of poetry. These texts could therefore represent a more abstract, yet relatable voice which needs to be valued by the user and modeled on a believable conversation (e.g. with a poet who reads her or his poems, but also communicates with the listener). In the field of Human-Computer Interaction (HCI), some studies showed that believable bots, in terms of computing products in relation to humans, are perceived as more trustworthy, valuable and that they bring richer and more engaging experiences than humans. (Fogg 1999, Bartnek 2001, Hingston 2012). While believability is only one aspect of accompanying texts (admittedly, a specific one), sharing the same media space with the poetic content puts accompanying texts in a different position than in case of separation.

4. DISCUSSION AND CONCLUSION

New possibilities of conversational interfaces commonly entail a deeper propagation of artistic intention and artistic act into the design of the medium. A synergistic interrelation between mediated poetic content and the conversational interface reflects in a similar synergistic manner to user experience, so design of the medium

becomes a space of artistic expression that is tightly related with the poetic space. The plethora of possibilities makes that space a complex, but expressive stage for creating a specific user experience. This goes so far that qualifying chatbots as a medium may become questionable, since their purpose and function overly surpasses the essential role of conveying the poetic content. However, the infrastructural connotation of chatbots in all their applications confirms their position between a functionality or content and the user.

The intentional avoidance of imposing particular guidelines and qualifications in the context of artistic practice indicate some necessary directions for the future work. Proposed paradigms for building a chatbot's media space should be analyzed in existing applications, but also systematically implemented and evaluated in order to explore user experiences. The existing poetry chatbots mentioned in the previous section do not demonstrate all the aspects discussed within the paper and have not been thoroughly analyzed in terms of established dimensions. Besides forming a valid framework for such analysis, an experimental approach is necessary to understand implications of all the proposed paradigms and approaches.

Chatbots, as a medium for poetry, assemble and enrich elements and roles of other media. It is a common characteristic of new media to enable media recombinations and a consequential remediation phenomenon with such speed and ease (Perloff at el. 2006). As many forms of electronic literature, chatbots are essentially a hybrid medium depending both on the characteristics of its elements and the human subject that interacts with it. A specific aspect, that idiomatically does not belong to the poetry domain, is conversation (more particularly, human-computer conversation) as a mediation paradigm. To design such a medium means to design conversations, since all the implications from new ways of influencing the reading order to inverse intentions exists due to the conversational paradigm.

References:

Arnheim, Rudolf. *A new Laocoön: artistic composites and the talking film*. Film as Art, 1938: 199-230.

Bartneck, Christoph. *Affective expressions of machines*. In CHI'01 extended abstracts on Human factors in computing systems, pp. 189-190. ACM, 2001.

Bates, Madeleine. *Models of natural language understanding*. Proceedings of the National Academy of Sciences 92, no. 22 (1995): 9977-9982.

Beardsley, Monroe C. *Aesthetics*. 1958.

Bohn, Willard. *Apollinaire, visual poetry, and art criticism*. Bucknell University Press, 1993.

Bolter, J. David, Richard Grusin, and Richard A. Grusin. *Remediation: Understanding new media*. MIT Press, 2000: 41-42

Catrambone, Richard, John Stasko, and Jun Xiao. *Anthropomorphic agents as a user interface paradigm: Experimental findings and a framework for research*. In Proceedings of the Annual Meeting of the Cognitive Science Society, vol. 24, no. 24. 2002.

Collingwood, Robin George. *The principles of art*. Vol. 11. Oxford University Press, 1938.

Collins, Billy. *Marginalia*. Poetry, no. 5 (1996), 249-251.

Danto, Arthur Coleman. *The transfiguration of the commonplace: a philosophy of art*. Harvard University Press, 1981.

Davies, David. *Medium in art*. In The Oxford Handbook of Aesthetics, OUP Oxford, 2003: 181.

Dixon, Steve. *Digital performance: a history of new media in theater, dance, performance art, and installation*. MIT press, 2007.

Fogg, B. J., and Hsiang Tseng. *The elements of computer credibility*. In Proceedings of the SIGCHI conference on Human Factors in Computing Systems, pp. 80-87. ACM, 1999.

Gazan, Rich. *Social annotations in digital library collections*. The Magazin of Digital Library Research, 2008.

Hanauer, David Ian. *Poetry as research: Exploring second language poetry writing*. Vol. 9. John Benjamins Publishing, 2010.

Harper, Adam. *Vaporwave and the Pop Art of the Virtual Plaza*. Dummy Mag, 2012.

Hingston, Philip. *Believable Bots: Can Computers Play Like People?* Springer Science & Business Media, 2012.

Hungerford, Amy. *Postmodern Supernaturalism: Ginsberg and the Search for a Supernatural Language*. The Yale Journal of Criticism 18, no. 2, 2005: 269-298.

Innis, Harold Adams. *Empire and Communications*. Oxford: Clarendon Press, 1950.

King, William Joseph, and Jun Ohya. *The representation of agents: Anthropomorphism, agency, and intelligence*. In Conference Companion on Human Factors in Computing Systems, pp. 289-290. ACM, 1996.

Laurel, Brenda, and S. Joy Mountford. *The art of human-computer interface design*. Addison-Wesley Longman Publishing Co., Inc., 1990.

LeWitt, Sol. *Paragraphs on conceptual art*. Artforum 5, no. 10, 1967: 79-83.

Marinetti, Filippo Tommaso. *The founding and manifesto of futurism*. Art Press Books, 2016.

McLuhan, Marshall, and Lapham, Lewis H. *Understanding Media: The Extensions of Man*. Cambridge, MA: The Mit Press, 1964. 1994.

Minarelli, Enzo. *The manifesto of polypoetry*. Visible Language 35, no. 1, 2001: 116.

Perloff, Marjorie, Adalaide Morris, and Thomas Swiss. *New Media Poetics: Contexts, Technotexts, and Theories*. (2006): 143.

Schofield, Tom, David Kirk, Telmo Amaral, Marian Dörk, Mitchell Whitelaw, Guy Schofield and Thomas Ploetz. *Archival Liveness: Designing with Collections Before and During Cataloguing and Digitization*. DHQ: Digital Humanities Quarterly 9, no. 3 (2015).

Serres, Michel. *The Parasite*. Baltimore: John Hopkins University Press, 1982.

Shannon, Claude Elwood, and Warren Weaver. *The Mathematical Theory of Communication*. Univ of Illinois Press, 1949.

Stuart, James. *It Begins in the Book. Writing the material poem*. Master Thesis. University of Technology, Sydney, 2009.

Tofts, Darren, and Ashley Crawford. *Interzone: media arts in Australia*. Thames & Hudson Australia, 2005.

Wollheim, Richard. *Art and its Objects*. Cambridge University Press, 1980.