Text Technology: Building Subjective and Shared Experience in Reading

Mette Steenberg,* Pernille Bräuner and Sebastian Wallot
Interacting Minds Centre, Department for Culture and Society,
Aarhus University, DK-8000 Aarhus C, Denmark
*Corresponding author, e-mail: mette.steenberg@gmail.com

Abstract

This article presents a case study of a facilitator-lead "shared reading" group with participants suffering from mental health problems. We argue that the text is the most important agent in creating a reading experience which is both subjective and shared. And we point to relatedness as a function of text agency, and to the role of facilitation in creating text-reader relations. The article also presents a new methodological framework combining physiological data of heart rate variability and linguistic, observational and subjective data. By integrating these distinct data points in our analysis we demonstrate the ways in which the text functions as an agent driving processes of individuation and synchronization respectively. On the basis of linguistic analysis of readers' responses and interactions we point to the cognitive process of mentalization underlying both individual readings and collective meaning making. At the end we discuss the relation of mentalization to diagnosis and argue that "shared reading" may function as an intervention form with a potential for modifying way of thinking; knowing when to read into and when not, and mode of thought; shifting from explanation to experience.

Keywords

Introduction

A current trend within cognitive approaches to the study of literature is to investigate the ways in which fiction relates to pro-social behaviour (Mar et al., 2006, Kidd and Castano 2013, Johnson 2011). A central question is whether literature enhances sociality and if so what are the underlying mechanisms and processes? One hypothesis is that reading involves mind-reading, or mentalization, taken to underlie social cognition at large (Frith and Frith, 2012), and, so the argument goes, reading fiction, which functions as a simulation of social interactions (Oatley and Mar, 2008) may enhance our mind-reading abilities (Zunshine, 2006; Fong and Mar, 2011).

In this study we explore the processes involved in reading with a focus on the practice of reading literary texts. We hypothesise that participation in material practice forms such as "shared reading" motivates and constraints cognitive processes and behaviour, including mentalization. Thereafter we analyse the ways in which participation sets forth and shapes those processes and how they afford social interactions. In that sense the present study is an investigation of what participation in shared reading allows you to feel, think and do and the basis of "what there is"; text, group, facilitator, setting. Furthermore, the study seeks to develop methodologies that make it possible to tap into the mechanisms and processes of text reading.

"Shared Reading"

"Shared reading" is a form of reading developed and practiced within the UK-based Get Into Reading (GIR) programme. The model is simple. A trained facilitator reads aloud, pauses and encourages participants to engage in reflections of the text. Over time participants may share in the role of reading aloud, with the facilitator continuously moderating shared responses and reflections. A session lasts 1.5 hour, an hour of prose reading (usually a short story or excerpt from a novel), followed by half an hour of poetry reading. Groups are delivered in public places, libraries, community settings, schools, prisons etc. Although GIR emphasises "reading for pleasure", and was never intended for therapeutic purposes, there is increasing evidence that people experience enhanced well-being as a result of participation (Dowrick et al., 2002; Billington et al., 2014; Steenberg, 2014).

Dowrick et al. (2012: 16) argue that shared reading "acts as a powerful socially coalescing presence, allowing readers a sense of subjective and shared experience at the same time". Linguistic analysis of online responses demonstrated a

development of "verbatim and near verbatim repetition" including "syntactic mirroring" and "reflective mirroring" over a 12-month period. This patterned activity is taken to be central to the process of "collective meaning making" and increased well-being.

On the basis of these observations in this study we wanted to analyse when and how "shared reading" becomes a technology that facilitates the expression of subjective and shared experience, and to understand the relation between the two. We posed the question, is it so that alignment; patterns of synchronized behavior is a factor for group cohesion, or if not what other mechanisms mediate the relation between subjective and shared experience.

One form of such alignment – physiological synchrony – has recently been observed in many social setting where participants coordinate their actions, for example in members of a choir during singing (Vickhoff et al., 2013), and the degree of physiological synchrony has been shown to be indicative of the strength of social relations between individuals in emotional situations (Konvalinka et al., 2011). Furthermore, recent research in joint action has demonstrated that synchrony is associated with greater rapport (Marsh, Richardson and Schmidt, 2009) and cooperation (Wiltermuth and Heath, 2009), making it a potential indicator for group cohesion.

On this basis we introduced a physiological measure (heart rate variability) to investigate the extent to which group cohesion is driven by synchronization and if so whether synchronization, as linguistic and reflective mirroring, would be an indicator of the coalescing experience of collective meaning making.

The Study

Data was collected during six reading sessions over a period of two months (February–March 2014). The group consisted of eight members (two men, six woman, aged 30-50 years) and was delivered as a network activity for well-educated people with a psychiatric diagnosis. We did not obtain knowledge about group members' personal backgrounds, "disease history", or clinical diagnosis. Data collection consisted of participant-observation during all six meetings; four sessions were audio-recorded, group members were heart-rate monitored and filled out a 9-point Likert-scale questionnaire after the session; five group members and the facilitator were interviewed 1-2 days after each of the four meetings.

The answers to the questionnaire were averaged for each session (see Figure 1, upper panels). In order to quantify heart-rate synchrony, we subjected the heart rate time-series of all members of a group to multivariate recurrence

quantification analysis (Thomasson et al., 2002), which has been used in many recent studies on social coordination to quantify physiological and behavioural synchrony (Fusaroli et al., 2014a,b). We used the measures of shared %Determinism as an index of synchrony: The higher %Determinism is between the heart rates of the members of a reading group session, the more synchronous are their heart rates (see Figure 1, bottom panel).

Despite having collected quantitative data from questionnaire as physiological measures, we decided to present and describe only the descriptive statistics and not to attempt inferential statistical analysis. This has to do with the nature of the data set, were we only obtained measures from four reading
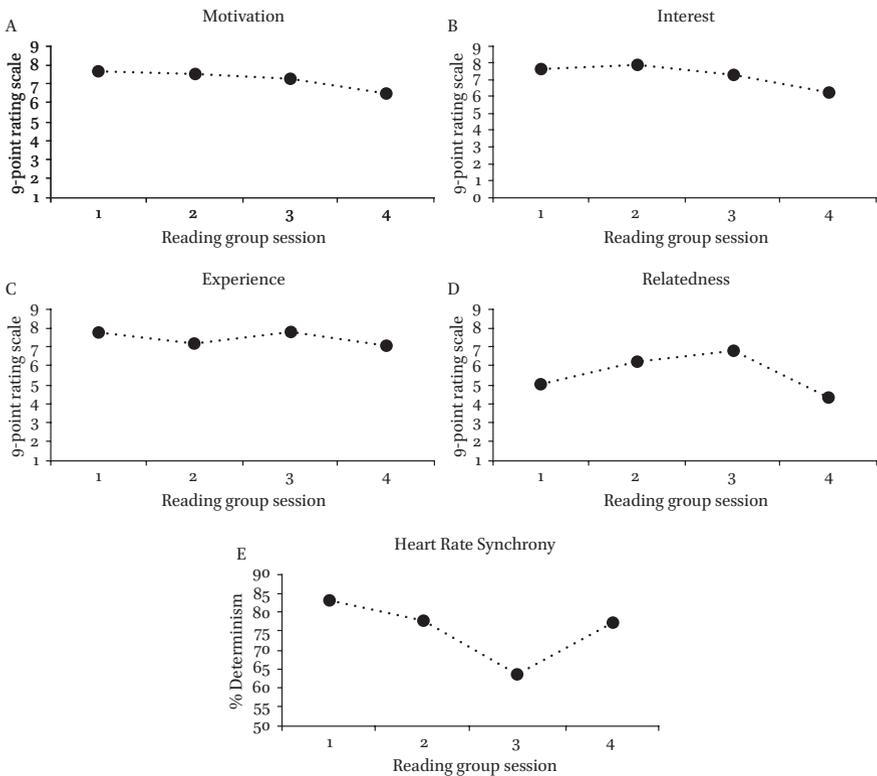

FIGURE 1   *Panels A–D show the values of self-reported motivation (A), interest (B), experience (C), and relatedness to the text (D) for the four reading group sessions. The bottom panel (E) shows the level of heart-rate synchrony among participants for the four reading group sessions. Heart rate synchrony seems to be closely related to feelings of relatedness, showing an inverse pattern to relatedness across the sessions: The more participants reported feelings of relatedness to the text, the lower the level of heart rate synchrony seemed to be (compare panels D and E).*

TABLE 1   *Number of participants, mean and standard deviations of the questionnaire items,*
            with standard deviations in parentheses

Session	N	Motivation	Interest	Experience	Relatedness
1	9	7.67 (0.52)	7.67 (1.03)	7.67 (1.97)	5.00 (2.83)
2	6	7.50 (1.04)	7.83 (0.75)	7.17 (1.72)	6.17 (1.60)
3	8	7.25 (2.18)	7.25 (1.58)	7.75 (1.98)	6.75 (0.71)
4	5	6.50 (1.29)	6.25 (2.21)	7.00 (0.82)	4.25 (2.63)

group sessions. Furthermore, not all participants were present at all of the four reading group sessions, making a repeated-measures analysis of the questionnaire items difficult at best. Table 1 presents an overview over the number of participants present at each reading group session, as well as the means and standard deviations for the four questionnaire items.

When examining the synchrony of the heart rate data we observed a non-expected tendency. Heart-rate variability data indicated that patterns of synchronization within the group became less stabilized over time (see Figure 1E). Also we observed an inverse relation between feeling personally related to the text and synchronization, such that as personal relatedness went up, synchronization went down, and inverse (compare Figure 1D and 1E). The other three items – regarding the motivation to participate (Figure 1A), the interest in the current session (Figure 1B) and the quality of the experience (Figure 1C) showed a mild downward trend over the sessions, but did not seem to be particularly related to heart rate synchronization.

At the same time, linguistic, observational and subjective data demonstrated a development of both self-assurance of individual expression and group cohesion over time. We therefore turned to the audio-recordings to do a reader-response analysis in order to understand when and how patterns of synchronization would destabilize at the same time as group cohesion would be strengthened, and how individual relatedness stands in relation to synchronization.

Analysing observational and linguistic data from the 4 recorded sessions testified that creating a reading of the text, which both "explains" the text and includes most group members is the overarching goal. The analysis also demonstrated that a cohesive reading is facilitated by a dynamic between individual expression and collective meaning making. In fact, the process of differentiation can be seen as a tool for the collective meaning-making as it becomes

a way of making the reading and the group cohesive; the more the group is able to accommodate individual responses, the more cohesive the group. Group cohesion thus works by processes of differentiation and synchronization. Recent advances in the study of dialogue have observed similar dynamics and it has been argued that linguistic alignment and synchronization has to be understood within a wider process of both "imitative and complementary" actions, and suggest a model of dialogue as interpersonal synergy (Fusaroli et al., 2014a,b).

The Practice of "Shared Reading": Processes of Individuation and Synchronization

The fact that physiological data and self-reported data demonstrated an inverse relation between synchronization and relatedness in combination with the fact that the 4th reading demonstrated a high level of synchronization yet less structured in terms of the different phases (reading, pausing, reflection) served as an indicator that the text is the most important agent, both in terms of driving relatedness but also in terms of structuring patterns of individuation and synchronization, respectively. The latter point is confirmed by the observation that in the three previous readings we observed marked differences between periods of differentiation and synchronization, allowing us to conclude that strong heterogeneous patterns happen in response to the text whereas a homogenous pattern of synchronization in the course of the reading indicates that agency has been redistributed into extra-textual elements.

Taken that text is the most important agent in driving processes of individuation and synchronization, we wanted to know how and when in response to what in the text this happened. We therefore turned to the qualitative data, in a first instance, observed data and reader responses recorded during reading session and in a second instance subjective data from the interviews.

In what follows we provide an analysis of the 4 different readings demonstrating how and when the text becomes a technology for processes of individuation and synchronization.

First Reading Session

The text is a short story that depicts the relationship of a married couple. It is cast, loosely, within a detective story frame, although figuring out "who

did it" is irrelevant to the psychological dimension; that of "not knowing" because of the opaqueness to feelings and motives within one self. Nevertheless, the explanatory reading that prevails throughout this session is, to some extent, motivated by the seemingly plot-oriented story scheme.

Confronted with the female protagonists' lack of reaction when receiving news of a murdered neighbour, reading group participants discuss her indifference attributing feelings of chock, or grief. Other explanations are brought in as well, some motivated by the story (adultery), others by psychological theories. The protagonists' lack of reaction is explained in terms of an emotional "frozenness" in response to losing a child (justified textually by the observation that the couple has no child). Other explanations again are based on personal experiences. These often serve the function of aligning subjective experiences creating common ground. In this case the female protagonists' insistence on going on with everyday life, mowing the lawn, as if nothing had happened, is explained by one group member with reference to personal experience and norms. "If you're in to gardening, as my father is", she says, "then you need to move your lawn every other day". And she continuous by setting another norm; if the neighbours were not close, it's ok, not to react. Such explanatory readings based on personal experiences establish the normative limits of the group, ensuring that I as an individual, thinking this, belong within the boundaries of the reasonable, and thus within the group.

The dialogue seek an all-inclusive reading in which individual responses can be included at the same time as a cohesive reading that explains the text can be maintained. In order to establish this equilibrium, the group goes through a series of readings towards higher level of abstractions and conclude at a meta-reading of unreliable narrators. However the "who did it" aspect is left open, and after the concluding period of poetry reading, the group once again returns to this question ending with the willing agreement, in laughter, of not being able to agree. This is a precise picture of what a good reading group session is for the participants, as testified in interviews: one which allows individual readings, yet creates group cohesion.

In the process of establishing the most inclusive level, individual reading plays an important function. The more "off", the more inclusive the group. Wild theories/readings are therefore generally encouraged, be they spilt-personality theories, as in this case. "Bring it on" says one group member, as another hesitatingly suggests that she might be over-interpreting. It is in this sense that individuation develops in parallel with group cohesion, or that one becomes a tool for the other. The more individualized the response, the more cohesive the group as a result of being able to accommodate the response/person, and the stronger the sense of both individuation and collectivity. As

one informant explains: *"...the others agree in our thoughts, right?...we are supported...we are accepting almost all the tiny little nooks and crannies within every word...you know...it has made me believe that I have some competences...I have a worth...right?..."*

Second Reading Session

The text describes an 8-year-old boy's physical and metaphysical exploration of the solidity of the world. He ends jumping out of a cliff into the sea as he has reached the conclusion that only air and water last, i.e., cannot be broken.

In this reading the thematic content of the text becomes an agent for sharing childhood experiences of pocket money, running away from home, and first kisses. As in the first reading the function of bringing personal memories and experiences motivated by the text ("what does a cobber coin look like", "how much candy does it buy", "I also ran away with my first boyfriend") brings reading group members together in a shared frame of reference at the same time as it sets norms for behaviour. In this case discussions evolve around parenting now and then, being a child in the 1960s versus nowadays.

There are elements of the absurd in the novel, as there is no causal relation between feelings and actions. Nevertheless there is a tendency within the group to impose a psychologically oriented explanatory reading of the text which is not motivated by the text but rather comes with the "suspicious" mindset of individual group members and also facilitation style. In this particular group, facilitation was very weak. It was weak to the point that it could be argued that there has been a missing tool in the technology of shared reading, which might explain some aspects of the predominantly explanatory reading style. That facilitation was indeed weak is testified by the fact that several group members were not able to identify the reading group facilitator, but mistook the network co-ordinator, who also participated, for the facilitator when asked in the interviews.

A trained reading group facilitator is, most importantly, trained to make participants Get Into Reading. Getting someone into reading involves raising an awareness of the experience of the text, as opposed to the explanation of the text, bringing to attention simultaneously the text; imagery, wordings, structure, descriptions of experiences, and reading group members' personal responses to those features. A key to this lies in facilitation. Where a trained facilitator will use mimicking of both text and reader, through "verbatim or near verbatim repetition", and ask questions that opens up for how something looks like or feels, including sharing personal experiences if relevant to get a feel for the depicted things and experiences, this facilitator never drew on per-

sonal experience, and would only in rare occasions, on average once per "discussion break" pose a question, and when doing so most often formulated as a "why" question, thus inviting an explanatory reading style as opposed to an experiential reading style.

The only occasion in which the facilitator points to the text directly, significantly alters the discussion. It happens at the beginning at the second session. The facilitator asks: "how do you like the language, he is repeating himself a lot ... "time was good, it was nothing – farewell stone, but not farewell water". Suddenly the participants are taken out of their explanatory reading behaviour and a more philosophical reflection begins. "It's a statement and a description" says one, it's a categorization, says another, "I like the language" says a third who rarely expresses her voice in the group, and then the group goes on in this more freely reflecting way till finally falling back into explanation again prompted by a facilitator-lead why-question.

Third and Fourth Reading Session

The third text is set in the context of World War II. It describes a single episode experienced from the view point of a 10-year-old, who finds himself alone in a world of fear disconnected from the adults by the losses and trauma they suffer. It's also a story of establishing human connections in the midst of grief and angst.

The fourth text is a story of loneliness and trying to break free from loneliness becoming someone for somebody – even when this body is dead.

Analysing sessions 3 and 4 together shows an inversed pattern between relatedness and synchronization. Relatedness is the highest in session 3, synchronization the lowest. The inverse holds for session 4. It therefore seems that when participants feel personally connected to the text, synchronization becomes secondary.

From the subjective data we are informed that several group members were deeply touched in the course of the 3rd reading, as it brought about memories of a lost sibling in one case, and traumatic memories of an absent father in another case. It seems thus that when individual members feel personally and emotionally attached to the story, synchronization is low, whereas when they feel disconnected from the text, synchronization is high. Another aspect of relevance is that patterns of individuation and synchronization become less structured when synchronization is high. Through the fourth session there is no marked difference between patterns of differentiation and synchronization, respectively. Synchronization is high but evenly distributed over periods of text reading and dialogue. This is an indication that the text has ceased to function

as an agent in the fourth reading. Only when the text functions as an agent, and it only does so when reading group members feel related to it, do we observe stabilised patterns of differentiation and synchronization.

Analysing readers' responses, we observe that the content of the 3rd text, much as during the second reading, motivates reading group members to bring in personal experiences, in this case family war stories, along with historical knowledge. Private memories are not brought into the reading but are revealed in subsequent interviews. However, they account for the relatedness. Looking at the self-reported data, the reading experience was rated high for the 3rd reading.

In the 4th reading, the story is from the very beginning rejected by in particular one dominant reader as irrelevant due to its "fairy-tale" elements (ghosts and afterlife) and the protagonist, an old lady, is continuously blamed of self-pitying. It is possible that the text could have taken agency, had reading group members felt related to the text as in the previous session 3. There is therefore a strong indication that the text can only function as an agent, when readers feel related to the text. Correspondence between thematic content and experience of the readers seemed to have an important function in the two previous reading sessions, sessions 2 and 3, in establishing text-reader relation. However from this thematic point of view also the 4th text could have motivated a conversation of loneliness and the need to establish meaningful relations to find purpose in life, in particular taking into consideration that all reading group members during interviews have attested that the primary motivation for joining the reading group, other than reading, is socialization and friendship. It's likely that the theme of loneliness became to unbearably close and had to be turned down, as reading group members repeatedly did when blaming the old lady for pitying herself, or perhaps a different and more experientially oriented facilitating style could have established the relation.

When the text is no longer the driving force, agency is distributed into extra-textual elements; jokes, laughter, ironic comments, political observations, or in peripheral observations in which all can share. In the 4th reading, the repeated imitation an odd hand gesture came to function as an agent for establishing the most significant text-driven shared level of interaction.

In conclusion, synchronization does not seem to be an effect of the text functioning as an agent, but that which happens when the text is no longer an active agent, with a lack of clear processes of differentiation and synchronization as a result. To put it differently, when one dominant reader, or extra-textual elements, become the driving force, because of a lack of relatedness, participants no longer makes an effort to bring the reading forward by indi-

vidual readings but seek towards a unification of experience located in extra-textual elements, and the reading becomes a single synchronous event as it were instead of a process of differentiation and synchronization.

Cognitive Processes: Reading Engagement and Mode of Thought

Turning to the processes and mechanisms of shared reading, the most common way in the reading group of aligning subjective and shared response rests on processes of mentalization and in its broader sense narrativisation, the first concerned with the attribution of mental states (including feelings, thoughts and intentions) based on behaviour, the latter with reasoning about intentional actions by constructing narratives (Hutto and Gallagher, 2008).

Shared reading, as a particular practice of reading, based on reading aloud, pausing, and engaging in online reflections of the passage just read, externalize the processes of mentalization and narrativisation by which meaning emerges in text-reader transaction and makes them available for analysis. However externalization of these processes becomes in itself an important function within the shared reading group as a technology for aligning and contrasting subjective and shared experience; expressing and checking whether what I feel and think is in accordance with the experience of others.

Therefore, we have looked at those elements that clearly belong to the practice of shared reading. Another important dimension which does not form part of the practice as such but plays an active role in this particular group is mode of thought as expressed through reading engagement and as shaped by diagnosis.

The overall engagement can be characterized as a suspicious reading mode. It could be argued that as a reading mode it is born out of cultural specific text reading practice; critical reading, based on the idea of exposing the repressed or hidden meanings of a text. Paul Ricour termed this kind of analysis the "hermeneutics of suspicion", and it has been at the core of most critical reading agendas within academia and in literary education at large in the latter part of the 20th century. As such it is a model for reading which the reading group members, all highly educated, are familiar with. This shows in remarks like the following: "what's in that sentence. . . . she says, he hasn't been standing like this since we were newly married, something is hidden in that sentence, I think".

Although suspicion is an aspect of critical thinking, and although the first short story to some extent favours a who did it and for what reasons plot-oriented reading mode, there is a more general level at which suspicion is at stake in this

particular group. Suspicion seems to be a mode of thought based on the inability of knowing when and how to read intentions and feelings into particular scenarios and situations, and perhaps more importantly, when not to. In this light the suspicious reading mode may be seen as an indicator of impairments in mentalization.

Within the group there is often too little understanding of the feelings that motivate behaviour, or behaviour is over-interpreted attributing feelings and motives which are not there in the text. As an example the second text, a metaphysical-existential exploration of the solidity of the world, is read suspiciously, as if a piece of psychological realism, and is as a consequence turned into a story of child abuse.

Obviously all readings are "readings in", whether fiction, or social situations. In social interactions, misunderstanding guides us building yet better models of one another's mental states towards better understanding. In individual literary reading the text is the only active corrective. In shared reading, co-readers become another important corrective.

There is yet another aspect of suspicion which relates to diagnosis rather than to practice; the level of tolerated uncertainty. Suspicion, which aims at explanation and finding causes, can be seen as a way of eliminating non-tolerable uncertainty. The second text, for instance, invites a more open exploration of the world in which behaviour is to some extent unpredictable, as there is no causal link between feeling and action. However this openness cannot be tolerated within the group and has to be closed down by theories and causes. The marked intolerance to uncertainty becomes most striking analysing transcriptions from the poetry readings. The unease to stay with a meaning that isn't fixed makes group members either reject poems, or the author, and there is a marked tendency to leave resources at hand all together googling and looking for "expert" readings/explanations.

What's Next: Modifying Reading Engagement and Cognitive Processes

If reading engagement is shaped by cognitive style or mode of thought, then the next question is whether engagement, and with it, mode of thinking and feeling can be modified. A number of recent reader-response studies show that engagement, and here in particular experiential engagement, is an important factor for the experience of "self-modifying feelings" in the course of reading

(Kuiken et al., 2004; Sikora et al., 2011). As facilitation was minimal in the present group, what we have observed is reading engagement as motivated and constraint by text, group and setting, but not by facilitation. We know however that facilitation matters for reading engagement as indicated by the sudden shift in the second session into a more exploratory engagement as soon as the facilitator points to a non-explanatory facet of reading. We also know from observation of other shared reading groups reading the same set of texts, that reading engagement depends to a large extent on facilitation skills and techniques, and that reading engagement can, in a normal population, be modified from explanatory to experiential (Bräuner, in press). It is, therefore, a necessary next step to manipulate the relation between facilitation and reading engagement.

Doing so this study may have implications for the field of social cognition. In addition to modifying engagement from explanatory to experiential, we speculate that aligning subjective and shared readings drawing on cognitive processes of mentalization may function as an ecological social skills training form. A number of recent studies in the field of social cognition indicate a relation between mentalization and affective as well as psychotic disorders (Bliksted et al., 2014; Ladegaard et al., 2014). There is therefore good reason, as suggested by Fischer Kern (2012) to look at targeted activities that address the underpinnings of social cognition, such as mentalization. One such activity may be shared reading as a technology for reading into, and perhaps just as importantly knowing when not to read into, but simply stay with the uncertainties and complexities of human experience.

Conclusion

This study, using a mixed method approach, has pointed to the text as a significant agent of a reading experience which is at the same time subjective and shared. When the text does not function as the primary agent, synchronization is reinforced at the expense of individuation. We have further observed that facilitation is a factor for relatedness and subsequently for making the text an agent.

This is an important finding both for understanding the role of synchronization in task and object-mediated interactions building group cohesion, and, as well as for understanding the how and when of text-reader interactions and reading engagement.
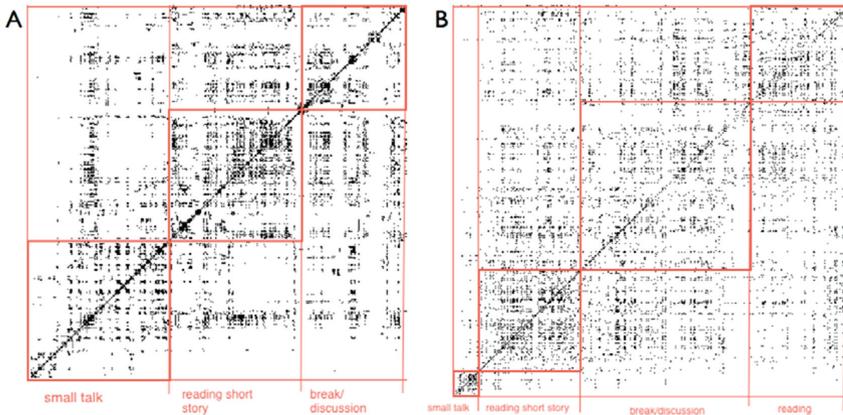
FIGURE 2   *Panels A and B display the Recurrence Plots (RPs) for the reading group's heart*
             rate for the first 15 minutes during the 2nd session (A) and the 4th session
             (B) Black structures on the PRs indicate periods of high heart-rate synchrony,
             while white spaces indicate the absence of synchrony. When comparing (A) and
             (B), one can see that heart rate synchrony seems overall more structured in terms
             of the different phases of the reading group sessions (e.g., reading, discussion,
             etc.) during the 2nd session, while heart-rate activity is much more homogenous
             in the 4th session.

Acknowledgements

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