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Topic shifts in spontaneous interaction of speakers with schizophrenia: Cohesion and thematic structures

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Abstract: This study investigates the linguistic patterning that created shifts in the topic of spontaneous interactions of speakers with schizophrenia. The psychiatric category of disorganized speech in schizophrenia may be manifested in language across (derailment) or within (incoherence) clauses through unexpected topic shifts. Topic switching was examined for cohesion and thematic structures, within the framework of systemic functional linguistics (SFL). Three patients diagnosed with schizophrenia conversed individually with a psychiatrist who elicited information on various topics, e.g., background information, hobbies, etc. The interviews were videotaped, and audio-recorded. The recordings were transcribed by the researcher and divided into clauses, which were analyzed and coded for consistency of field, cohesion and thematic structures. The findings revealed that speakers did not make use of linguistic features simultaneously to initiate topics. Topic shifts were marked by moving fields with atypical reference, intertwining of participant chains, and lexical items appearing out of context. The speakers created discontinuous participant chains across Themes and departed from the main thematic sequences of linear progression and Theme iteration. The specific linguistic findings correspond to the clinical description of schizophrenia.

Keywords: cohesion; reference; schizophrenia; SFL; thematic structures; topic shifts

1 Introduction

Using linguistic features enables speakers to communicate clearly and convey interpretable messages. The choices psychiatric patients make are not always appropriate or accessible to the hearer and therefore, atypical speech patterns

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occur. Speakers with schizophrenia often fail to engage in clear conversation and construct social interaction. They lack spontaneous adaptation to the flow of conversation because of inappropriate linguistic choices (Covington et al. 2005).

Disorganized speech that is a major criterion in the definition for schizophrenia is evident in the psychiatric categories, e.g., derailment and incoherence, poverty of content of speech, irrelevant or tangential responses, i.e. frequent jumping to unrelated ideas (McGrath 1991). According to the American Psychiatric Association (APA 2013: 88),

The individual may switch from one topic to another (derailment or loose associations). Answers to questions may be obliquely related or completely unrelated (tangentiality). Speech may be so severely disorganized that it is nearly incomprehensible.

This study aims to (a) provide a descriptive framework for the structures and types of topic shifts in context, (b) explain how these linguistic choices are responsible for the social impairments in schizophrenia, and (c) show how the linguistic features speakers use coincide with the clinical description of schizophrenia.

The analytical framework is based upon systemic functional linguistics (SFL), which is concerned primarily with the choices made available to speakers of a language by grammatical systems (Halliday and Matthiessen 2013; Martin and Rose 2007). The study analyses the organization of messages in terms of Theme and Rheme (Daneš 1974; Fries 2002; Halliday and Matthiessen 2013; Martin 1992; Martin and Rose 2007), and cohesive devices (Halliday and Hasan 1976; Martin 1992; Martin and Rose 2007) to understand how speakers with schizophrenia develop, or fail to develop topics, and how they depart from main thematic progressions. The following research questions guide this study:

1. How is the flow of conversation of speakers with schizophrenia disrupted by topic shift within and across clauses?
2. How do speakers shift topic by the thematic organization of the clause and the cohesive devices they use?

The article is organized as follows. Section 2 presents the relevant background about diagnostic criteria for schizophrenia and language skills in schizophrenia. Literature review is presented in Section 3 along the following issues: thematic structures (3.1), cohesive devices (3.2), topic and field (3.3), and derailment and incoherence (3.4). Data and method are presented in Section 4 describing the study's participants, and analytical procedure. In Section 5, a detailed systemic functional linguistics analysis is presented: Section 5.1 discusses discontinuous participants across Themes, Sections 5.2 and 5.3 address the use of unclear references and exophoric references across Themes respectively. Section 5.4 presents

lexical items appearing out of context, and Section 5.5 analyzes the appearance of general participants/events in the developing conversation. Finally, Section 5.6 analyzes atypical thematic progression of lexical items. Finally, Section 6 includes a discussion of the key findings and concludes with a reflection regarding the use and misuse of linguistic features by speakers with schizophrenia.

2 Background

2.1 Diagnostic criteria for schizophrenia

“The essential features of schizophrenia are a mixture of characteristic signs and symptoms that have been present for a significant portion of time during a one month period” (APA 2013). These symptoms include a. delusions; b. hallucinations; c. disorganized speech (e.g., frequent derailment – an across clause phenomenon or incoherence – as a disturbance within a clause); d. grossly disorganized or catatonic behavior; and e. negative symptoms, i.e., restricted fluency and productivity of thought and language. The current study shows how specific linguistic criteria express the clinical categories of topic shifts and disorganized speech in schizophrenia.

2.2 Language skills in schizophrenia

Abnormalities of language are considered a diagnostic indicator of schizophrenia; “language clearly reflects the pertinent degree of psychopathology” (Wróbel 1990: 6) in diagnosing schizophrenia. The speech of patients with schizophrenia may be disorganized in a variety of ways: the person may ‘slip off the track’ from one topic to another; answers to questions may be obliquely related or completely unrelated (APA 2013). “Failure [...] to produce stretches of language that seem coherent to the listener has long been regarded as an essential characteristic of the schizophrenic patient” (Rochester and Martin 1979: 73).

3 Literature review

3.1 Thematic structures

The structure which gives the clause its character as a message is called thematic structure. In English, “one part of the clause is enunciated as the Theme;

this then combines with the remainder [Rheme] so that the two parts together constitute a message” (Halliday and Matthiessen 2013: 88). Theme serves as “the point of departure for the message; it is that which locates and orients the clause within its context” (p. 89). The structure of Theme and Rheme is expressed by order: the Theme is what is put first. It is “everything up to and including the first experiential element [participant, process or circumstance; whichever comes first]” (Martin et al. 1997: 28) and everything after that will constitute the Rheme.

Speakers can make various meaningful choices on how the first position in a clause should be filled. Themes in clauses extend the analysis of a text beyond the grammatical structure of individual clauses to the unit of text and it is, therefore, an important linguistic feature in analyzing topic shifts. According to Fine (2006: 67),

Speakers who seem disconnected to the context, including being disconnected to the other speakers and other utterances, may be misusing this Theme-Rheme structure and may be sending unusual messages of what is the starting point or what is the development of the message.

In order to signal successful development of the conversation and stay on topic, speakers must use thematic progression, which contributes to the cohesive development of a text.

According to Daneš (1974), thematic progression concerns the way texts develop the ideas they present by recognizing where Themes come from and how they relate to other Themes and Rhemes of the text. The way in which lexical strings and reference chains interact with Theme is not random and it is the relationship between Rheme and the given Theme that is communicatively relevant. Daneš (1974) proposed three thematic progression patterns that manifest differently in different genres as follows:

- 1) In linear Theme, the content of the Theme of the second clause derives from the content of the previous Rheme so there is “a high incidence of cross referential links from the Rheme of one clause to the Theme of the next clause [...] in which each successive idea is an expansion of an idea in the previous sentence” (Wang 2007: 169) and it, therefore, guides readers/listeners as to where the information has come from and where it is going, and hence creates coherence.
- 2) In Theme iteration, the same Theme enters in relation with a number of different Rhemes so Themes constitute a chain of co-referential items extending through a sequence of clauses.

- 3) In derived Themes, the passage as a whole concerns a single general notion; all Themes derive from that notion but are not identical.

3.2 Cohesive devices

3.2.1 Cohesion

This study examines the cohesive devices of reference and lexical cohesion to explore how speakers with schizophrenia shift topics in social interactions. Cohesion is a part of the text-forming component in the linguistic system; it is the ‘non-structural text-forming relation’ (Halliday and Hasan 1976: 7) which indicates the relation of one stretch of language to another and to the nonverbal context. The concept of cohesion in text is related to semantic ties or ‘relations of meanings that exist within the text, and that define it as a text’ (Halliday and Hasan 1976: 4). Within text, if a previously mentioned element is referred to again and is dependent upon another element, it is considered a tie. Without semantic ties, sentences or utterances would seem to lack any type of relationship to each other and will not be considered text.

Halliday and Hasan (1976: 2) refer to this intertextual link as ‘the presupposing’ and ‘the presupposed’, as in the example, “Wash and core six cooking apples. Put them into a fireproof dish”. The word ‘them’ presupposes ‘apples’ and provides a semantic tie between the two sentences, thus creating cohesion. Several researchers (Fine 2006; Rochester and Martin 1979) pointed at specific difficulties with cohesion associated with schizophrenia showing that speakers are often incapable of shifting topics properly through cohesive devices. Martin and Rose (2007) added that the realities speakers with schizophrenia create are frequently inconsistent or uninterruptable so that hearers find it difficult to follow the continuity and keep track of meaning in the text.

3.2.2 Reference

Reference is a semantic relation which creates and indexes the continuity of participants in the text. The way in which participants are identified is an important aspect in how a text unfolds (Martin and Rose 2007). Reference signals retrieval of information “by referring to things that are already semiotically accessible, [...] in the text, or potentially, in the context of situation” (Halliday and Matthiessen 1999: 530). It is one of the major linguistic features of the language of schizophrenia since it directly relates to the clinical description of incoherent speech and it is used in this study to encode how speakers with schizophrenia introduce participants in the

ongoing conversation and how such participants are referred to in a developing conversation.

Endophoric reference refers to items within the text such that the referent is recoverable from the verbal context, as in the following example: “Three blind mice, three blind mice. See how they run! See how they run” (Halliday and Hasan 1976: 31). The pronoun ‘they’ refers to ‘three blind mice’ so the interpretation of ‘they’ depends on its referential meaning which can be retrieved. Detecting such referential ties is essential for the semantic interpretation of a text.

The interpretation of exophoric references lies in the nonverbal situation, making reference to something that is not explicitly verbal and cannot be retrieved from the text. It refers to the environment in which the dialog is taking place, the context of situation. In the sentence ‘I see you here now’ (Fine et al. 1994: 321), for example, ‘I’, ‘you’, ‘here’, and ‘now’ all direct the listener to examine the physical circumstances to make these words interpretable.

An additional type of reference is unclear reference, which can take two shapes: ambiguous or additioning. Ambiguous reference relates to a nominal group with more than one possible antecedent in the text and therefore, needs to be disambiguated as in: “My father and brother are both tall. He likes basketball” (Fine et al. 1994: 321). The use of ‘He’ is ambiguous since there are two possible antecedents: ‘my father’ or ‘brother’. Additioning reference, on the other hand, relates to a nominal group not mentioned in the context. In this case, the hearer is expected to add the missing information as in: “John crossed the other river” (Fine et al. 1994: 321); “the other river” is not interpretable without some specific, earlier mention of a first river.

3.2.2.1 Presenting and presuming reference

Presenting and presuming information is used to tie language to the social context of the conversation. Presenting information develops the conversation by adding new ideas and topics to old ones so the social context of the conversation can expand. According to Martin and Rose (2007), resources that introduce people are presenting reference and those that track people are presuming reference. Presuming information links participants in the text to previously mentioned participants and such information is often realized by the definite article ‘the’. In contrast, when speakers introduce a new nominal, they typically use an indefinite article such as ‘a’ or ‘an’.

3.2.3 Lexical cohesion

Lexical cohesion establishes continuity in text through the selection of lexical items that are connected to previous lexical items. Its cohesive effect is achieved by

the selection of vocabulary and it is created by general nouns (a small set of nouns having generalized reference within the major noun classes such as human noun, place noun, etc.), or repetition (reiteration) of a lexical item, e.g., bear in the following sentences “Algy met a bear. The bear was bulgy” (Halliday 1985: 310). The second occurrence of bear harks back to the first. Rochester and Martin (1979: 98) report for schizophrenia that “proportions of high lexical ties reflect an aberrant discourse process in which components of clauses and sentences seem to be chosen mainly on the basis of limited lexical meanings”. This study explores whether speakers establish or fail to establish continuity in the text by the section of lexical items.

3.3 Topic and field

Topic is defined as “the entity, proposition or main idea which a clause, a stretch of discourse or a discourse in its global sense is primarily about” (Moya Guijarro 2006: 39). “Independent of their positions in the clause, new topics are those topical entities that are introduced for the first time in the discourse” (p. 42). It is “an intuitively satisfactory way of describing the unifying principle which makes one stretch of discourse ‘about’ something and the next stretch ‘about’ something else” (Brown and Yule 1983: 70). In the current study, the term ‘topic’ relates to discourse topic – “what is being talked about in the conversation” (Wong et al. 1991: 221) and not sentential topic determined by grammatical parameters.

Field is defined as the “subject matter of a conversation [...] nature of the social action that is taking place, what is it that the participants are engaged in” (Martin 1992: 499). The clinical term ‘topic shift’ describes ideas similar to changes in field. Such fields are reflected in and created by the patterning of lexical items.

3.4 Derailment and incoherence

Derailment is a pattern of speech in which a person’s ideas slip off one topic onto another that is completely unrelated or only obliquely related. It is “speech or thinking that is essentially incomprehensible to others because word or phrases are joined together without a logical or meaningful connection” (APA 2013: 823). If speakers do not link things, events or places, the expected ideational meaning of language changes with no warning, resulting in atypical speech patterns.

Incoherence, as a clinical category, occurs when there are no meaningful connections between words or phrases within a clause (Ribiero 1994). In the example “colorless green ideas sleep furiously” (Chomsky 1957), all the words

have meanings but not when put together in this fashion. In summary, derailment and incoherence are the clinical features of disorganized speech; they are associated with the unexpected shifts in topics that are obliquely related or completely unrelated to the ongoing conversation (APA 2013).

4 Data and method

4.1 Participants

This study included a focal participant who was interviewed for approximately 30 min and two additional participants (each was interviewed for 20–30 min). The participants were native speakers of English and English was used throughout the conversations.

The focal speaker was 27 years old at the time of the interview, born in Canada and had moved with his mother to Arizona where he apparently had a stepfather. He was brought to the Emergency Psychiatric Service after he had been arrested for creating a public disturbance. On admission, he was in good physical health, but showed a significant thought disorder (i.e., he could not stay on a topic and gave marginally relevant or unrelated answers to questions).

The two additional schizophrenic speakers were selected from a group of 16 patients, eight patients with schizophrenia and eight patients without schizophrenia (Bartolucci and Fine 1987). The original study examined the frequency of cohesion weakness in psychiatric syndromes and concluded that cohesive weakness is a more frequent characteristic of the language of speakers with schizophrenia, compared to the conversation of psychiatric patients in other diagnostic categories. The selected speakers were matched as closely possible according to age, verbal IQ, performance IQ and judgment of thought disorder using a four-point categorization of thought disorder (Rochester and Martin 1979). Table 1 summarizes the characteristics and language data of the speakers.

Table 1: Speakers' characteristics.

Speaker	Diagnosis	Sex	Age	VIQ	PIQ	TD
Speaker 1: Lo	Schizophrenia; chronic	M	27	91	97	3
Speaker 2: Al	Schizophrenia; acute	M	21	91	96	3
Speaker 3: Ch	Schizophrenia; chronic	F	72	102	82	3

TD, rating of thought disorder; VIQ, verbal IQ; PIQ, performance IQ.

4.2 Procedure

Interviews with the participants were conducted in the clinician's office; they were informal and the questions were generally open-ended. The topics included personal issues from the participants' lives: their childhood, personal situations, etc. and were chosen by the interviewer and the participants in the course of the interview. Special attention was given to language and choice of words to describe the topic shifts in the interviews.

All interviews were videotaped and recorded.

Students were notified about the purpose of research and its voluntary basis. Anonymity was secured, and identification details were omitted. Formal ethical permission from the university's research authority and evaluation committee was granted. The recorded material was transcribed by the researcher and transcriptions were divided to clauses. Each clause was analyzed and coded according to Themes and Rhemes. In all speech samples, (T) and (R) mark Theme and Rheme positions respectively and arrows indicate thematic progressions (Appendix 1). Cohesive devices were highlighted to assess the speakers' ability to produce coherent messages, stay on topic and develop the conversation. Most clauses (more than 60% for each participant) were not regarded as syntactically well formed. Syntactically well-formed clauses are determined according to a. completeness of clauses and b. proper cohesive devices across clauses.

4.3 Analytical procedure

The detailed linguistic analysis in this case study (Creswell 2013) is based on thematic structure of clauses and the cohesive devices of reference and lexical cohesion, the two devices used by the speakers in conversation to indicate how they tie language to the social context of conversation and identify their organizational structure in the talk. The interview data were examined both explicitly and holistically while going back and forth with the transcripts, formulating arguments that were supported by the themes that emerged and generated the final analytic framework. The linguistic features the speakers use to shift topics are analyzed to indicate how language is heard and what impression speech has on the listener.

5 Findings

The analysis reveals six types of topic shifts: a. discontinuous participants across Themes of messages b. using unclear references, c. using exophoric references

across Themes, d. lexical items appearing out of context or misused, e. general participants/events in the developing conversation and f. atypical thematic progression of lexical items. Topic shifts are examined in light of the textual meaning of language, which refers to the clause as a message. The linguistic features used to understand the speakers' atypical topic shifts are Theme and cohesion.

5.1 Discontinuous participants across Themes

When lexical items that encode different fields intertwine in adjacent clauses, the result sounds confusing since one group of content words is woven into the other and participants across Themes change several times in one turn. A turn refers to all the talk produced by one speaker before another speaker starts to speak (Sacks et al. 1974). As a consequence, there is less consistency of field, which often leads to the clinical perception of shifts in topic. The speakers in this study change participants that encode different fields in Theme position without 'carrying on' a single idea as the starting point of the message.

Speech sample (1) illustrates how the lexical items encoding 'pills' and 'kids' intertwine in one turn. The lexical items encoding the field 'pills' are underlined and the lexical items encoding the field 'kids' are in bold. The numbers indicate the turn number in the transcription. The arrows indicate intertwining of discontinuous participants across Themes (See transcription conventions in Appendix 1).

- (1) 73 I: Ya ya. So are you in on this pill-taking business ?
- 74 S: to tell you the truth, the pills (T) are given to **the kids** (R)
- S: when **they** [=kids] (T)'re young
- S: because they [=pills] (T) still in my stomach, you know
- S: so **the kids** (T) will naturally get the pills (R)
-

In turn 73, the interviewer demands information: '[...] are you in on this pill-taking business'? In turn 74, the speaker places 'the pills' in Theme position and 'the kids' in Rheme. A clause later, 'they' appears in Theme position as an unclear reference which is disambiguated in Rheme position when the speakers says 'are young'. This information in Rheme position clearly connects 'they' to 'the kids'. Next, the speaker uses 'they' again, and it is disambiguated in the Rheme when the speaker says: 'are still in my stomach, you know'. Here, the hearer identifies 'they' with 'the pills'. Both pronouns are disambiguated by information in the Rhemes. This pattern suggests that the speaker is aware of who 'they' refers to in each Theme

because the predicates of these clauses, i.e., ‘are young’ and ‘still in my stomach’, disambiguate the meaning of the clause. In the last clause of turn 74, the two content words appear together, ‘the kids’ in the Theme and ‘the pills’ in the Rheme: ‘so the kids will naturally get the pills’. This pattern is confusing since with the anaphoric reference at a distance and the intertwining of discontinuous participants across Themes, it is not clear whether the speaker is referring to the same ‘kids’ that were mentioned in previous turns.

In terms of reference, the speaker uses both presenting and presuming information to encode how participants are introduced and referred to in a developing text. As Martin (1992: 102) observes:

Presenting reference signals that the identity of the participant in question cannot be recovered from the context; presuming reference signals that it can. Presenting reference is thus strongly associated with first mention and presuming reference categorically associated with second mention.

Content words that encode the field of ‘kids’ are introduced in this example as presuming reference, realized by the definite article ‘the’. Themes are presented as given information, and often contain presuming reference.

When the speakers introduce a new nominal, they typically use an indefinite article such as ‘a’ or ‘an’. This pattern follows the interpretation that lexical items encoding fields refer to participants that were previously mentioned. Otherwise, the speaker would have used presenting reference to introduce a new nominal. This finding indicates that the speaker expects the hearer to acknowledge who or what these nominals refer to and, accordingly, the hearer would identify them as given information. With respect to thematic structures that assign structural functions to the clause and are realized by the order of words in the clause, the speaker changes topics according to the position of field words in the clause (Theme and Rheme). Although ‘they’ in ‘when they (T)’re young’ (turn 74) is an unclear reference, it is disambiguated for the hearer in the Rheme. When the speaker says ‘they are young’, the hearer identifies ‘they’ with ‘the kids’ because of the adjective ‘young’, a human trait. ‘Pills’ first appears in a Theme as a response to the interviewer’s initiation. It is then followed by a pronoun development in another Theme. The two nominals, i.e., ‘the pills’ and ‘they’, do not, however, create a referential chain because ‘they’ in ‘when they’re young’ refers to ‘the kids’ and disrupts this potential chain in Theme.

In terms of thematic progression, the direction of progression differs as ‘the kids’ is introduced in Rheme position and then moves to Theme while ‘pill’ words are introduced in Theme position to signal the starting point of the message and later move to the Rheme. The four endophoric references that encode the fields of

‘pills’ and ‘the kids’ intertwine and do not show consistency in terms of the direction of Theme progression. The speakers do not use explicit topic framing to notify the listener that the topic is about to change and the topic boundaries are not clearly marked.

Speech sample (2) also shows that the intertwining of participants encoding different fields results in discontinuous participants across the Themes of messages. Pronoun developments of the lexical items ‘children’ are underlined; ‘Richard’ field words are in bold, and ‘Louise N’ is in italics; the arrows show intertwining of participants.

- (2) 102 S: So um they (T)'re so unhappy (xxx)
 S: There (T)'s nothing nice in the world for them (R) or us
 S: but **Richie** (T) was kidnapped
 S: **he** (T) was overpowered by that *Louise N* (R)
 S: *she* (T)'s overpowered
 S: *she* (T) was very mean and nasty with **him** (R)
-

In turn 102, three different participants are mentioned in Theme position: ‘they’ [=the children], ‘Richie’, and ‘she’ [=Louise N]. The clause ‘but Richie was kidnapped’ is disconnected from context since it is not related by participants or processes to the previous clause of “there’s nothing nice in the world for them or us”. ‘Richie’, which is Theme, is not an expected continuation of the participant in the previous Rheme, i.e., ‘them’, which is a pronoun development of the field ‘children’. As turn 102 unfolds, the Theme pronoun ‘he’ changes to ‘she’ again (Louise N); consequently, there is no continuity of participants in the turn.

The speakers with schizophrenia change participants in Theme very frequently without continuing a single idea as the starting point of the message. In conclusion, although the speakers use the thematic patterns of Theme iteration and linear Theme, these patterns are not systematically developed since several participants, instead of one, occupy the Themes of clauses. Participants in Themes change, without presenting a single idea as the starting point of the messages. That is, pronouns in Themes (and Rhemes) do not create consistent referential chains extending through several clauses.

5.2 Using unclear references

Another type of intertwining occurs when the speakers use unclear references. Unclear references refer to a nominal group not found in the context and therefore, there is no continuing field. In speech sample (3), three participants are introduced in one turn; 'he' and 'him', both referring to 'Mr. Trudeau' (in bold), 'the children' and their pronoun developments (underlined), and 'we' (twice) and 'ours' are unclear references (italics). The arrows show discontinuous participants across Themes of the message.

- (3) 124 S: and **he** [=Mr. Trudeau] (T) took the two little children (R) with **him**
 S: because *we* (T) were travelling
 S: and *we* (T) were on foot
 S: so **he** (T) took them (R) up there
 S: and that's how it is
 S: they (T)'re *ours* (R)
 S: but I don't like to say anything to anybody about it
 S: because they (T) wonder why M. [Mr. Trudeau's wife] gave birth to them.

In the first clause, 'he' is in Theme position. In the following clause, the Theme changes to 'we', an unclear reference which creates a referential chain spanning two clauses: 'because we were traveling and we were on foot'. Then, the participants shift again as 'he' reappears in the Theme: 'so he took them up there'. Finally, the endophoric reference 'they' creates a referential chain in the Themes across two clauses. Shifting many participants in the Themes of a single turn leads to confusion because (a) there is no continuity of participants across the starting points of the message, and (b) some of the participants are unclear references that have to be disambiguated or added (i.e., 'we', 'ours'). In addition, the proper name 'M' (last clause) is abruptly introduced although people know in the cultural context that 'M' is the wife of Mr. Trudeau, the prime minister of Canada. Moreover, the exophoric reference 'there' in 'so he (T) took them (R) up there' does not relate to a particular place mentioned before and, therefore, decreases texture.

The findings indicate that there is little continuity of participants across Themes of clauses, as different Themes ('he', 'we', 'they') intertwine in a single turn and participants that were introduced in Rhemes do not constitute the Theme of following clauses ('the two little children' → 'we', 'they' → 'he') as in linear Theme

progression. Since proper names and exophoric references are abruptly introduced, groups of content words woven into another create inconsistency of field.

5.3 Using exophoric references across Themes

Exophoric references refer to items in the immediate physical environment. First- and second-person forms 'are defined by the speech roles of speaker and hearer, and hence they are normally interpreted exophorically, by reference to the situation' (Halliday and Hasan 1976: 48). The speakers in this study place first-person referents mainly in Theme position to present themselves as the starting point of the message, taking the role of speaker in most exophoric references, thus creating unmarked topical Themes which consist of a pronoun, or a nominal functioning as subject in declarative clauses. Such Themes refer to the first experiential element in a clause (participant, process, or circumstance) throughout the unfolding conversation.

If the speaker had used marked topical Themes, the sentences would have included many adjuncts and complements realized by adverbs or adjectives. One possible explanation for using "I" as the clause initial element may be to create topical coherence; the topic of the conversation as a whole is 'I'. However, by repeating the same type of thematic progression (i.e., Theme iteration), the same Theme constitutes a chain of co-referential items extending through a sequence of clauses as the following examples show.

This repetition creates a sense of incongruity since the conversation follows a constant structure with respect to how one part of the clause leads to the next, as in speech samples (4) and (5). The exophoric references 'I' in Themes are in bold and the arrows show thematic progressions.

- (4) 25 S: and uh...So **I** (T) guess
- S: **I** (T) had to give something away
- S: so **I** (T) could get into uh what I was doing there
- S: uh so **I** (T) could get into the art
- S: but **I** (T) guess
- S: **I** (T) really shouldn't of
- S: **I** (T) just should 'of put my mind in that
- S: uh **I** (T) should have put
-
- ```

graph TD
 S1["S: and uh...So I (T) guess"] --> S2["S: I (T) had to give something away"]
 S2 --> S3["S: so I (T) could get into uh what I was doing there"]
 S3 --> S4["S: uh so I (T) could get into the art"]
 S4 --> S5["S: but I (T) guess"]
 S5 --> S6["S: I (T) really shouldn't of"]
 S6 --> S7["S: I (T) just should 'of put my mind in that"]
 S7 --> S8["S: uh I (T) should have put"]

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- (5)
- 122 S: Uh, **I** (T) was in The Sounds of Music back then .  
S: **I** (T) was ah the maid that came from the Mormon Temple from Chicago to  
Nebraska  
123 I: Umm mmm. To Nebraska  
124 S: **I** (T) have uh wrote books  
S: **I** (T)'ve sung you songs  
S: uh, ya **I** (T) came from Nebraska State University  
S: In other words, **I** (T)'ve graduated from lawyer's school

Speech samples (4) and (5) show that instead of combining exophoric references with other participants in Themes of clauses, the speakers with schizophrenia use the pronoun 'I' to create thematic iteration and unity, but only in terms of participants' shared knowledge of the speaker. By using exophoric references in one part of the clause (Theme), the speakers restrict speech since exophoric references do not move to the Rhemes of clauses and continuity in the text is achieved only through the identity of the speaker; thus, the odd effect of field inconsistency is evident in the speech of these individuals.

#### 5.4 Lexical items appearing out of context or misused

Another type of intertwining occurs when certain lexical items combine, that is, lexical items which do not create continuity but rather appear as single or double occurrences in the course of conversation. Such words in the nominal group create an inconsistent field because they are not continued in the conversation. Speech sample (6) shows how the lexical items 'factory', 'college', 'operation', and 'tube', in bold, intertwine with other lexical items encoding fields ('kincaid' or 'phonies'). The square brackets indicate ellipsis.

- (6) 41 I: Do you know any phonies?  
42 S: Do I know any phonies (R)?  
43 I: Yeah [do you know any phonies]  
44 S: No, [I don't know any phonies] (R)  
45 I: You don't [know any phonies]  
46 S: No, I don't know any phonies (R)  
S: There's a Kincaid )R)  
S: He's on the loose

- S: and I don't think  
 S: he, he's **a phony** (R)  
 S: He may have **an operation** or **a factory** (R) or something  
 S: and I gotta go down and see what **the college** (R) is up to  
 S: if **the college** (T) wants to turn **a tube** (R) on themselves

Occurrences of content words ('operation', 'factory', 'college', 'tube') create weak texture and confuse the listener because they are not continued in the text. As a result, the interaction becomes incoherent and difficult to interpret because some participants become detached from context and the conversation becomes meaningless.

In terms of reference, the content words that encode the field of Phonies are all introduced as presenting, i.e., 'any phonies', 'a phony' in Rhemes of clauses. 'Any' is the unrestricted, marked form for singular in English which is used to 'signal that it does not matter which member of the experiential class in question is being referred to' (Martin 1992: 108). It should be mentioned that 'any' is used in three consecutive clauses. The fourth time 'phony' is used (turn 46), it is with the indefinite article 'a' which denotes singular in English. Although both articles ('a' and 'any') are unrestricted articles with different degrees of markedness, the speaker uses a more marked form ('any') to introduce the topic of phonies. Perhaps the speaker emphasizes the new topic of 'phonies' and then changes the article to a less marked one to show that the field of 'phonies' is now part of the ongoing conversation.

In addition to using such occurrences of lexical items, general reference to 'phonies' makes the conversation sound vague, as the talk does not refer to any one 'phony' in particular at any point in the conversation. Moreover, 'he' [= the phony] is not continued in the text once the single or double occurrences of lexical items enter the conversation in Rhemes ('He may have an operation or a factory (R) or something') and Themes ('if the college (T) wants to turn a tube (R) on themselves') of clauses.

Lexical cohesion is realized by repetitions of the interviewer's questions. Perhaps the speaker is trying to gain time before answering. When the speakers react to prior initiations, they typically do so elliptically, producing clauses that depend for their interpretation on related clauses.

In turn 44, the speaker uses clausal ellipsis, i.e., "No, [I don't know any phonies]." That is, the clause 'I don't know any phonies' is omitted. With respect to the position of lexical repetition in the thematic structure of the clause, the speaker uses the lexical item 'phonies' in Rhemes of clauses and never in Theme as a departure point. The Themes in these cases are either exophoric or endophoric reference. The lexical item 'the college', for example, is introduced in Rheme

position, the unmarked position for new information in English and then moves to the Theme. Although the direction of progression of ‘college’ is linear and the Rheme of one clause becomes the Theme of the next one and the conversation develops, the topic does not develop, since long and clear referential chains are not created. Such short sequences of referential chains break the flow of conversation because ‘the college’ is disconnected from the rest of the text. Even though the speaker uses a linear thematic progression, he fails to elaborate on a topic and the result sounds disconnected.

Another example that shows the speakers’ atypical use of lexical words that are not continued in the text is found in speech sample (7) in which the word ‘Tupperware’ is used twice) in turn 28 and in turn 72).

- (7) 28 S: But, we did help the kids to understand that the thing to ah **wear**  
their  
**Tupperware** and ah things like this.  
[...]  
72 S: I mean if they figure I used and put into **Tupperware** bowls or  
anything  
S: Um I think

In turn 28, the derailment is based on clang associations; the repetition of sound from ‘wear’ to ‘Tupperware’ shifts the topic of conversation from one participant to another irrelevant participant. As the conversation develops, ‘Tupperware’ is mentioned again in turn 72. Consequently, there is no continuity from one set of content words to the next and the result sounds as if there are intrusions or derailment in the conversation. The lexical item ‘Tupperware’ creates inconsistency in field since it develops the conversation based on similarities of sound and not according to continuity of topics.

## 5.5 General participants/events in the developing conversation

Intertwining general participants and events that do not relate to specific individuals or circumstances leads to misunderstandings. In speech sample (8), the word ‘people’ (in bold) is mentioned as generic information in Rhemes with ‘hearing voices’. This combination appears in three non-adjacent turns.

- (8) 31 S: Well, I can **hear people** (R) talking  
39 S: Like, can’t you **hear people** (R) talking down the hall and?  
49 S: I don’t know if **people** (R) can **hear** (R) me or not.

The speaker hears people talking. The word ‘people’ does not refer to specific individuals, or else the speaker would have used proper names or pronouns to link to specific individuals. Such general words show a disconnection from any specific reality since the speaker does not connect himself to other individuals in particular. By linking ‘people’ to ‘voices’ the hearer’s vagueness increases since both sets of words are general words that do not relate to specific ‘people’ or ‘voices’.

Using two lexical items (‘people’ and ‘voices’) in a single clause creates speech that is detached from reality since it does not encode specific participants and events. When unaffected speakers introduce participants, there is often a clear agreement who the participant is without making his/her identity known. In this case, speech remains vague and hard to interpret for long stretches of text.

## 5.6 Atypical thematic progression of lexical items

The speakers use content words to construct fields in Rhemes of clauses; the thematic progression of participants or events is continuously Rheme to Rheme with no movement to Theme. The speaker initiates topics in the Rheme by introducing participants and repeating them for several consecutive clauses. The information introduced in the Rheme of one clause continues in the Rheme of the next clause, as seen in speech sample (9).

- (9) 19 S: uh I used to **give** (R) a lot of myself **away**
- 20 I: Uh hum
- 21 S: No, I was not losing
- S: I used to **give** (R) a lot of myself
- S: but, then I knew what I was **giving away** (R)
- S: and I knew I would get it back... you know.
- 

In turn 19, the speaker presents the expression ‘give away’ in the Rheme and as the conversation develops, the expression is used two more times in the Rhemes of clauses in turn 21. Consequently, lexical items that encode fields do not function as the starting points of messages, but rather remain in Rhemes while the exophoric reference ‘I’ fills Themes of clauses.

In sum, the intertwining of participant chains can explain atypical topic shifts in the speech of speakers with schizophrenia. Speakers intertwine discontinuous participants across Themes of messages, use exophoric references (‘I’) across

Themes, and intertwine unclear references to shift topics. The speakers use short referential chains that are not continued in the text, participants introduced in Rhemes are not continued in the Themes or Rhemes of succeeding clauses, and change of participants mainly in Themes of clauses creates sets of content words which are improperly woven into another. The conversation would have sounded clearer if the speakers had created longer referential chains to create continuity, used more endophoric references across Themes to connect participants, and used less unclear references so that hearers do not have to find missing information.

## 6 Discussion and conclusion

The purpose of this study was to examine topic shifts in spontaneous interaction of speakers with schizophrenia within the framework of systemic functional linguistics. Topic shift was examined for cohesion and thematic structures, as components of the textual metafunction. Topic shift occurs when the ideational focus of talk changes. That is, the discourse of people with schizophrenia may have some cohesive ties with previous talk but will not be about the previous topic (Asp and deVilliers 2010; deVilliers et al. 2007). The speakers in this study use cohesive devices and thematic structures inappropriately to change topics and create clauses that are not connected.

The analysis of reference in this study shows that the speakers with schizophrenia use unclear references, which directly relates to the diagnostic criterion of disorganized speech, a defining symptom of schizophrenia (APA 2013). Unclear references are used mainly in Themes of clauses, so it is difficult to establish a continuing field since the listener cannot determine what or who the topic encoded in the Theme is about and its boundaries. According to Rochester and Martin (1979), unclear reference is a key factor in schizophrenia and frequent unclear references contribute to communication failure.

Additionally, the speakers do not use the typical encoding of presenting and presuming reference to shift topics. Consequently, presumed information cannot be recovered based on common understanding or present situation as suggested by Martin and Rose (2007). Perhaps, the speakers' misuse of a certain linguistic system, such as reference, reflects their difficulties in building social reality and, therefore, are regarded as atypical speakers by their speech community (Fine 2006).

Another linguistic feature, which reflects the clinical categories of disorganized speech and topic shifting, relates to the speakers' inability to maintain cohesive ties using lexical cohesion. The speakers insert unrelated lexical items across and within clauses. Possibly, instead of providing the relevant missing

information, the speakers use irrelevant lexical items to fulfill their part in the social interaction, and participate in the conversation. Such use of lexical items does not create any connection between stretches of talk and does not extend the meaning of what is said to make speech sound coherent.

These findings also support Rochester and Martin's (1979: 91) contention that "schizophrenic patients attend more strongly to lexical items than to the contexts in which those items are used [...] schizophrenic speakers are more likely to focus on lexical meanings in their discourse than on the meaning of whole clauses or the way in which clauses are related". It is further stated that "schizophrenic speakers sometimes attend to the sound features of words rather than to the lexical meanings [...] of words in context" (p. 92). Connecting clauses based on the phonetic similarities of words ("clang association", Section 5.4) creates relevance at the surface lexical level and does not establish continuity in text by the selection of lexical items that relate to previous lexical items.

Finally, atypical topic shifts are not a result of using a single linguistic feature inappropriately, but the co-occurrence of several inappropriate linguistic features (i.e., introduction of multiple Themes, unclear references, and cohesive devices). Misusing a number of linguistic features at the same time produces speech that sounds like a 'word salad' (Kaplan and Sadock 1985) even when elements of grammar and vocabulary are intact.

The study has certain limitations. The transcripts in this study are analyzed according to cohesive devices and thematic structures. Meaning, however, can also be conveyed by the use of the prosody system (intonation and stress) and nonverbal behaviors (facial expressions, gestures, proximity), which contributes their own meaning of what is being said. In addition to lexically and grammatically realized linguistic features, intonation and nonverbal cues can explain the motivation for shifting topics.

In addition, some effects that were not present in this study such as the use of additional cohesive devices (ellipsis, conjunctions, substitution) might be of interest to provide a more comprehensive picture regarding schizophrenia speakers' linguistic choices. Finally, although this case study provides a detailed analysis of three individuals with schizophrenia, it is advisable to use a greater number of speakers carefully sampled, to afford a more comprehensive picture regarding topic shifts.

Despite these limitations, the findings in this study are consistent with previous research that points to the important role communication impairment, or disorganization, broadly plays in schizophrenia (Gooding et al. 2012). The strength of this study is that it could shed light on schizophrenia speakers' use of linguistic structures and the benefits of this research should be translated into practice in clinics. Clinicians could use this substantial information as a tool to improve

schizophrenia speakers’ communicative and social abilities by instructing them on how to make better linguistic choices and stay on topic.

Although the present findings are compatible with the clinical accounts, future research should continue to explore the linguistic patterning speakers with schizophrenia use in conversation. Since it is often unclear whether schizophrenia speakers reflect deficits in language itself or in related cognitive processes such as planning, execution, and memory (Covington et al. 2005), it is important to re-examine the connection between schizophrenia and cognitive capacity and to explore whether speakers with schizophrenia could benefit from cognitive training (Johnson et al. 2013; Trivedi 2006). An examination of the cognitive factors relating to thinking and decision-making processes can influence the way schizophrenia speakers act in social situations. Moreover, the particular deviation of the language of speakers with schizophrenia can be compared to other psychiatric or non-psychotic disorders to establish the criteria for atypical topic shifts found specifically in schizophrenia.

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## Appendix 1 Transcription conventions

|                                          |             |
|------------------------------------------|-------------|
| I:                                       | Interviewer |
| S:                                       | Speaker     |
| (T):                                     | Theme       |
| (R):                                     | Rheme       |
| Numbers in transcriptions indicate turns |             |

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