

Narrating Emotional Events in Schizophrenia

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Research has indicated that schizophrenia patients report similar amounts of experienced emotion in response to emotional material compared with nonpatients. However, less is known about how schizophrenia patients describe and make sense of their emotional life events. We adopted a narrative approach to investigate schizophrenia patients' renderings of their emotional life experiences. In Study 1, patients' ($n = 42$) positive and negative narratives were similarly personal, tellable, engaged, and appropriate. However, negative narratives were less grammatically clear than positive narratives, and positive narratives were more likely to involve other people than negative narratives. In Study 2, emotional (positive and negative) narratives were less tellable and detached, yet more linear and social compared with neutral narratives for both schizophrenia patients ($n = 24$) and healthy controls ($n = 19$). However, patients' narratives about emotional life events were less appropriate to context and less linear, and patients' narratives, whether emotional or not, were less tellable and more detached compared with controls' narratives. Although schizophrenia patients are capable of recounting life events that trigger different emotions, the telling of these life events is fraught with difficulty.

Keywords: schizophrenia, emotion, narratives, discourse

Some of the earliest descriptions of schizophrenia include disturbances in emotion (e.g., Bleuler, 1911/1950; Kraepelin, 1919; Sullivan, 1927), and recent research has confirmed these clinical observations (e.g., Berenbaum & Oltmanns 1992; Dworkin et al. 1996; Kring & Earnst, 1999; Kring, Kerr, Smith, & Neale, 1993; Kring & Neale, 1996; Mattes et al. 1995). Specifically, schizophrenia patients are less outwardly expressive of negative emotions yet report experiencing similar or greater amounts of negative emotion compared with healthy controls across a variety of studies and methods (e.g., Blanchard, Mueser, & Bellack, 1998; Horan & Blanchard, 2003; Kring & Germans, 2004; Kring et al. 1993; Kring & Neale, 1996; Myin-Germeys, Delespaul, & deVries, 2000). In response to positive stimuli (e.g., films, pictures, beverages), schizophrenia patients are less facially expressive compared with controls despite reporting a similar intensity of positive emotion experience (e.g., Berenbaum & Oltmanns, 1992; Horan & Blanchard, 2003; Kring et al., 1993; Kring & Neale, 1996; see Cohen & Minor, 2007 for a review). By contrast, experience sampling, trait self-report, and clinical interview studies have found that patients report experiencing somewhat less

positive emotion compared with controls (e.g., Blanchard, Horan, & Brown, 2001; Blanchard et al., 1998; Horan, Kring, & Blanchard, 2006; Kring & Germans, 2004; Myin-Germeys et al., 2000). Thus, although schizophrenia patients are less expressive of positive and negative emotions in the presence of emotionally evocative stimuli, patients' reports of experienced emotion are fairly comparable to reports of healthy individuals across different methods and measures. Moreover, schizophrenia patients' ratings of their experienced emotion are reflected by the same two dimensional structure (valence and arousal) as healthy controls (Kring, Barrett, & Gard, 2003), thus bolstering confidence in schizophrenia patients' ability to report on their emotional experience.

We know less, however, about the contexts and life events that trigger emotional experiences in the daily lives of schizophrenia patients and whether the ways in which patients describe and make sense of these emotional life events differ from the ways in which healthy controls talk about these experiences. The present two studies sought to understand the ways in which schizophrenia patients narrate their positive and negative emotional life events.

The Nature and Significance of a Narrative Approach

A narrative approach is particularly well suited to examine the contexts that trigger conversations about emotions and the ways in which emotional life events are described. A narrative approach focuses on the storytelling of an emotional event by examining the language used to describe the event, the temporal sequencing of elements in the event, and the social context of the event. Narratives enable individuals to not only refer to their emotions, but also to explore and evaluate their significance (Capps & Bonanno, 2000; Labov & Waletzky, 1968; Miller et al., 1990). Indeed, Capps and Bonanno noted that the language of narratives "not only reflects, but constitutes emotions" (p. 4). That is, examining the words, grammatical structure, and clarity of an emotional story tells us not only about the use of language, but also about the

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experience of emotion. The process of narration requires an evaluative stance of the narrator toward the narrated event, revealed through both what the person says and how she or he says it. This personal, evaluative dimension of narratives is manifest in both the choice of lexicon and in the underlying grammatical structure (Capps & Ochs, 1995).

Ochs and Capps (2001) argued that narratives vary along several key discourse dimensions. First, narratives vary in their degree of "tellability," with stories that are interesting, elaborated, and smoothly and clearly presented by the narrator considered to be more tellable. Less tellable stories are marked by hesitant, unclear, or awkward discourse and thus may reflect an event that is more impersonal. Second, narratives vary in the extent to which they are detached; that is, how linked or relevant they are to the topic at hand. Third, narratives vary as to how linear they are, ranging from a clear temporal sequencing of events to an unclear, disorganized, and uncertain unfolding of events.

Previous research has shown that narrative approaches are richly informative with respect to understanding disturbances in emotion and cognition across several disorders, including autism (Capps, Yirmiya, & Sigman, 1992; Losch & Capps, 2006), depression (Rottenberg, Jorman, Brozovich, & Gotlib, 2005; Rude, Gortner, & Pennebaker, 2003), agoraphobia (Capps & Ochs, 1995), as well as the course of bereavement (Capps & Bonanno, 2000). For example, Losch and Capps (2006) examined positive (e.g., happy, proud), negative (sad, afraid, disappointed, embarrassed), and non-emotional (tired, sick) life event narratives in children with and without high-functioning autism (HFA). They found that HFA children generated narratives about complex social emotions (i.e., embarrassment and pride) that were less detailed, contextually appropriate, and grammatically clear compared with healthy children's narratives. These findings highlight the centrality of deficits in complex social emotions in daily life among children with autism. In major depression, Rottenberg and colleagues (2005) found that the intensity of narrated sad memories predicted an increase in depression symptoms at a 1-year follow-up, suggesting that the capacity to respond appropriately to sad life events plays an important role in the course of depression. In research on bereavement, Capps and Bonanno (2000) analyzed positive and negative emotional narratives from bereaved spouses about their relationship with their deceased spouse. Both the valence and grammatical structure of the narratives predicted greater grief and somatic complaints at 6, 14, and 25 months following the death of a spouse. Taken together, these studies highlight how a narrative approach can illuminate our understanding of emotional disturbance in clinical disorders by examining the ways in which individuals describe their emotional life experiences.

Despite the potential of a narrative approach to elucidate the ways in which schizophrenia patients describe their emotional life events, relatively little research has adopted this approach. Research has instead focused on how language disturbances are manifested in the context of speech about emotional events. For example, the paradigm developed by Docherty and colleagues calls for schizophrenia patients to generate a speech sample during an interview that covers nonstressful (i.e., "good memories" or "pleasant, nonstressful times") and stressful (i.e., "bad memories" or "stressful times") topics chosen by the patients. These speech samples are then coded for six different types of referential language disturbances (Docherty, DeRosa, & Andreasen, 1996).

Findings from this group indicate that schizophrenia patients, their relatives, and healthy controls exhibit more referential language disturbance (typically assessed as the mean across the six disturbances) in their stressful compared with nonstressful speech samples (e.g., Cohen & Docherty, 2004; Docherty, Evans, Sledge, Selby & Krystal, 1994; Docherty, Hall, & Gordinier, 1998; Docherty & Hebert, 1997; Docherty, Rhinewine, Nienow, & Cohen, 2001). When the six specific disturbances were examined individually, only vague references (references lack specificity), confused references (references are uncertain), and ambiguous word meanings (intended definition of a word is unclear) were more prevalent in stressful compared with nonstressful speech samples (Docherty et al., 1998; Docherty & Hebert, 1997). Two studies have found that schizophrenia patients exhibit greater referential language disturbances than nonpatients when discussing pleasant or neutral topics (Cohen & Docherty, 2005; Docherty, Gordinier, Hall, & Cutting, 1999). Using a similar paradigm, Burbridge and Barch (2002) found that schizophrenia patients exhibited more unclear references when talking about negatively valenced than neutral topics, though this study did not include a nonpatient comparison group.

These studies have been informative with respect to understanding the nature of referential language disturbances in schizophrenia when patients are discussing emotional events, but not with respect to understanding the ways in which patients narrate, and thus make sense of, their emotional life experiences. With respect to understanding emotion disturbance in schizophrenia, the narrative approach can uncover meaningful differences between schizophrenia patients and healthy individuals in how they construct and derive meaning from their own emotional life events by zeroing in on aspects of emotion in daily life that other methods cannot readily capture (Gruber & Keltner, 2007). Indeed, a narrative approach has the potential to shed rich insight into the uniqueness and social context of life events. Narratives also lend themselves to analyses of the extent to which recounted life events are contextually appropriate, personable, and elaborated (Gruber & Keltner, 2007; Kring & Germans, 2004), and this level of analysis may uncover important differences in emotional experience between schizophrenia patients and controls that are not as readily discerned from the presentation of emotionally evocative stimuli. On the other hand, this approach may reveal that such nuanced aspects of narrating life events are intact in schizophrenia, thus adding to the corpus of knowledge suggesting that emotional experience in schizophrenia is relatively preserved even amidst profound disruption in cognition and emotion expressive behavior.

Overview of the Present Studies

We present two studies that employed a narrative approach to examine the ways in which schizophrenia patients narrate their emotional life events. In Study 1, we analyzed schizophrenia patients' responses to questions from a structured clinical interview, the Schedule for Deficit Syndrome (SDS; Kirkpatrick et al., 1989) that asked patients to describe life events that elicited both positive and negative emotions. In Study 2, we analyzed schizophrenia patients and healthy controls' responses to an in-depth interview explicitly designed to elicit narratives about emotional life events. By asking about several emotions, we reasoned we would get a richer narrative base from which to examine the ways

in which patients talked about their emotional experiences. As has been done in prior narrative studies (Aldrich & Tenenbaum, 2006; Bohanek, Fivush, & Walker, 2005; Losch & Capps, 2006; Rosenthal, 1999), we counted the number of total words to index the length of the narrative response as well as the number of specific emotion words, such as happy, proud, or sad. We also examined the extent to which the content of the narratives matched or was appropriate to the emotion being queried about (Losch & Capps, 2006; Rottenberg et al., 2005).

Following prior research (Capps & Bonanno, 2000; Ochs & Capps, 2001; Rottenberg et al., 2005), we analyzed narratives for grammatical structure and clarity, degree of elaboration, and the extent to which the stories directly involved the narrator to assess tellability. To measure the extent to which the narratives were detached or connected to the topic, we analyzed the narratives for meaning clarity, the number of times the interviewer had to ask for clarification, and the extent to which patients used vague trailers at the end of the story, indicating an unfinished story. Prior studies coded for similar constructs, including meaning and prompting (Losch & Capps, 2006). Finally, we examined the social context of the narratives by coding whether patients' descriptions of emotional life events involved other people.

Hypotheses for Study 1

Given that schizophrenia patients' ratings of experienced emotion are consistent with the stimuli presented (i.e., patients report experiencing more positive emotion in response to positive than negative or neutral stimuli; see Kring & Germans, 2004 for a review), we predicted that patients would use more positive emotion words in their positive than negative narratives. Similarly, we expected that patients would use more negative emotion words in their negative compared with their positive narratives. We also expected that the positive and negative narratives would be coded as equally contextually appropriate to the emotions being asked about.

With respect to the manner in which patients narrated their emotional life experiences, we hypothesized that patients' narratives would differ along the narrative dimensions described by Ochs and Capps (2001) depending upon the valence of the narrative. More specifically, based on research indicating that patients exhibit more referential language disturbances when recounting stressful compared with nonstressful topics, we hypothesized that patients' negative narratives would be less tellable compared with their positive narratives, as reflected by less clear grammar, less elaboration, and less personal centrality. In addition, we expected that patients' negative narratives would be more detached compared with their positive narratives, as reflected by less clear meaning, more vague endings, and more clarification prompts.

Finally, we tested two competing hypotheses regarding the social context of narratives about emotional experience. Given that social interactions are often fraught with distressing emotions for schizophrenia patients (Hooley et al., 1987; Krause et al., 1992), we reasoned that schizophrenia patients' negative narratives would be more likely to involve other people than positive narratives. By contrast, there is a large body of literature indicating that positive emotions strengthen and maintain social bonds and relationships (see Keltner & Kring, 1998 for a review), and thus we reasoned

that patients' positive narratives might be more likely to involve other people than their negative narratives.

Study 1

Method

Participants. Forty-two male schizophrenia patients (34 outpatients; 8 inpatients) between the ages of 18 and 60 years participated in the study. Diagnoses were determined using the Structured Clinical Interview for *DSM-IV*, patient edition (SCID-I/P; First, Spitzer, Gibbon, & Williams, 1994). All patients were taking neuroleptic medication at the time of testing. These patients were also part of a study examining emotional responding in deficit and nondeficit schizophrenia (Earnst & Kring, 1999). Patients with a history of severe head trauma, stroke, neurological disease, or current mood disorder or substance abuse were not recruited for the study. Demographic and clinical characteristics of the sample are presented in Table 1.

Patients participated in a semistructured clinical interview that included questions from the Brief Psychiatric Rating Scale (BPRS; Overall and Gorham, 1962) and the SDS (Kirkpatrick et al., 1989). The BPRS was rated on a 7-point scale from 1 (*not present*) to 7 (*extremely severe*). A positive symptom subscale (sum of unusual thought content, conceptual disorganization, hallucinations, and suspiciousness items) and a negative symptom subscale (sum of the blunted affect, emotional withdrawal, and motor retardation items) were computed.

The narratives came from patients' responses to the emotional range questions on the SDS. These questions were open ended and asked patients to describe events that elicited five emotions, including happiness, enjoyment, sadness, feelings of upset, and

Table 1
Demographic and Clinical Characteristics

Variable	Study 1		Study 2
	Sz	Sz	Ctrl
Age (in years)	42.71 (8.36)	38.61 (9.59)	43.83 (9.64)
Education (in years)	12.83 (1.91)	14.37 (2.49)	13.24 (0.84)
Ethnicity (<i>n</i>)			
African American	17	9	7
Asian American	0	3	3
Caucasian	23	7	6
Latino	0	4	2
Multiethnic	2	1	0
Marital status (<i>n</i>)			
Married	13	1	1
Divorced	9	5	4
Single	18	18	14
Living with	1	0	0
Employment status (<i>n</i>)			
Unemployed	36	20	15
Employed	5	4	4
Prior hospitalizations (<i>n</i>)	8.27 (7.46)	3.87 (4.76)	
BPRS total	36.31 (7.02)	43.09 (9.98)	
BPRS positive	9.36 (4.50)	11.31 (4.73)	
BPRS negative	8.05 (3.00)	5.03 (2.57)	

Note. Values are means unless otherwise specified. Standard deviations are in parentheses. Sz = schizophrenia patients; Ctrl = control group; BPRS = Brief Psychiatric Rating Scale.

anger/irritation. The questions were prefaced by the phrase “what types of things make you feel ____” and thus tended to pull for multiple, and often brief, emotional stories. Both the SDS and BPRS scores were assigned by two trained raters (doctoral candidates in clinical psychology trained by a licensed clinical psychologist).¹

Coding of emotion narratives. The audiotapes were transcribed by trained research assistants following standard transcription conventions (Ochs & Capps, 2001). Two trained coders blind to the hypotheses of the study coded the narratives. Narratives from the SDS were first coded for the number of discrete stories described. Coders achieved a high rate of agreement in their judgments about the number of discrete events recounted per emotion, with intraclass correlations (ICCs; Shrout & Fleiss, 1979, case 2 formula) of .89, .95, .95, .95, and .80 for the happy, enjoy, upset, sad, and angry/irritated narratives, respectively.

We also counted the number of emotion words in the transcripts using a computerized program called Oedipus (Levenson, 2005; Rosenthal, 1999). The emotion dictionary in the Oedipus program contains nearly 3,500 emotion words, providing greater specificity and detail about emotion words than other programs (e.g., Linguistic Inquiry and Word Count; Pennebaker, Francis, & Booth, 2001). Oedipus was designed to identify and tally a number of different positive (e.g., interest, amusement, excitement, joy, love, pride, relax, satisfied) and negative (e.g., anger, anxiety, apathy, bewildered, contempt, disgust, embarrass, envy, fear, grief, guilt, pain, sad, shame) words and their variants (e.g., excite, excited, excitement, exciting). Individual words falling in the positive and negative emotion categories were summed to create a positive or negative composite for each event.

Each individual event was also coded for the narrative dimensions of tellability and detachment (Ochs & Capps, 2001) as well as for its appropriateness and sociality. For all coded variables, higher numbers reflected a greater deficit or problem. Thus, variables rated on a 3-point scale were coded such that a 3 indicated a deficit and a 1 indicated no deficit; dichotomously coded variables were coded such that a 1 indicated a deficit and 0 indicated no deficit. One variable was coded as a frequency of occurrence such that a higher number reflected a greater deficit. In addition to these coded variables, we also counted the number of overall words for each event to ascertain length of narrative.

We coded appropriateness on a 3-point scale (1 = *appropriate*, 2 = *moderately appropriate*, 3 = *inappropriate*) to indicate whether the narrative content matched the emotion being asked about. An event was coded appropriate if it was normative to the emotion being asked about (e.g., “a good meal” for a happy event). A moderately appropriate response was somewhat odd with respect to the emotion being asked about (e.g., in response to “what types of things make you angry” a patient responded: “with people, uh, wantin’ to bump into me er, come up and pat me on the back or somethin’ . . .”). An inappropriate event was not normative with respect to the question (e.g., in response to “what types of things make you upset” a patient answered: “you know, playin’ something to go a certain way, you want it to go that way, you know”).

Following the work of Ochs and Capps (2001), tellability included codes for grammar clarity, degree of elaboration, and personal centrality. Grammar clarity was rated on a 3-point scale (1 = *clear*, 2 = *moderately clear*, 3 = *unclear*). A clear event was one that was relatively free of grammatical errors. A moderately

clear event had grammatical errors, but these did not largely detract from structural clarity of the event description. An unclear event was one with significant grammatical errors that significantly impaired syntax and/or the ability to comprehend the event. Elaboration was rated on a 3-point scale (1 = *elaborated*, 2 = *moderately elaborated*, 3 = *nonelaborated*). An elaborated event included at least one piece of additional information aside from the event itself, which made for a complete, self-contained description of the event. A moderately elaborated event included at least one piece of additional information aside from the event itself, though important detail pertaining to the full event was omitted. An unelaborated event was a one-word, or terse, response providing no additional information aside from stating the event. Personal relevance was rated dichotomously (yes/no). Although the questions asked directly about patients’ own emotional life events, patients could nevertheless respond with a story or event that was not centrally personal. For example, in response to the question “what makes you sad,” a patient responded: “Uh [2 s pause] make me sad, n’, let’s see, if there’s someone losin’ a loved one.” This response does not clearly connote an event that directly involved the narrator.

The narrative dimension of detachment included codes for meaning clarity, vague trailers, and the number of clarification prompts provided by the interviewer. Meaning clarity was similarly rated on a 3-point scale (1 = *clear*, 2 = *moderately clear*, 3 = *unclear*). The ways in which meaning could be unclear included contradictory statements, unspecified referents, disorganized presentation, word substitution, or tangential. A vague trailer was an end of story utterance that reflected an unfinished or incomplete story (e.g., “and so on and so forth. . .”) and “and all sorts of things like that. . .”) and was coded dichotomously (0 = *not present*; 1 = *present*). Clarification prompts were those prompts that the interviewer provided to clear up confusion about a patient’s story (e.g., “what was that?”, “could you clarify that?”) and were summed for each event. As in most clinical interviews, the interviewer was free to prompt for clarification as needed. No other systematic prompting was part of the interview.

Sociality was rated dichotomously (yes/no). The narrative was rated as “social” if the narrative included a description of the direct presence, interaction, or observation of others. If none of the above criteria was met, the narrative was coded as “non-social.”

Results

Data reduction and rater agreement. For all coded variables, we computed means across the discrete events recounted for each emotion question. To reduce the number of dependent variables in the analyses and because we did not have hypotheses about specific positive or negative emotions, we computed means across happy and enjoy to create a positive composite and across sad,

¹ The SDS is a symptom rating scale that was developed to facilitate the categorization of patients into deficit and nondeficit groups. Nineteen patients met deficit syndrome criteria and thus were included in the deficit group, while 22 patients did not meet deficit syndrome criteria and were included in the nondeficit group. Because the deficit/nondeficit distinction was not a primary focus of this study, we combined the deficit and nondeficit patients into one group. Notably, the two patient groups did not differ on any of the demographic, clinical, or narrative variables analyzed here.

upset, and angry/irritated to create a negative composite. Four patients did not offer any response to the questions about negative emotional experiences, and thus the final n for the analyses comparing positive and negative narratives was 38. Patients did not differ in the average number of events recounted in response to queries about positive (2.57, $SD = 0.96$) or negative (2.31, $SD = 1.22$) emotional life events, $t(41) = 1.28$, ns .

Coders achieved a high rate of agreement for grammar clarity, elaboration, meaning clarity, appropriateness, and clarification prompts, with ICCs ranging from 0.81 to 0.93 (Shrout & Fleiss, 1979, Case 2 formula). Kappas for personal relevance, vague trailers, and sociality were also acceptable, ranging from 0.72 to 0.90. We collapsed across coders for all of the coded variables used in the main analyses.

Word usage and context appropriateness. Patients did not differ in the average number of words for positive (36.98, $SD = 32.41$) or negative (41.79, $SD = 29.37$) emotional life events, $t(41) = 1.06$, ns . The relatively brief responses reflect the fact that interview questions pulled for lists of events rather than more fully elaborated stories, a limitation to which we return to below. To examine whether the positive and negative narratives differed with respect to emotion words uttered in the narratives, we conducted a 2 (narrative type: positive, negative) \times 2 (emotion word: positive, negative) multivariate analysis of variance (MANOVA; see Table 2). Both the emotion word main effect, $F(1, 40) = 12.60$, $p = .001$, $\eta_p^2 = .24$, and the Narrative Type \times Emotion Word interaction were significant, $F(1, 40) = 52.98$, $p < .001$, $\eta_p^2 = .57$. Overall, patients used more positive emotion words in their narratives than negative emotion words. However, patients used more positive emotion words in their positive compared with their negative narratives, $F(1, 40) = 45.08$, $p < .001$, and more negative emotion words in their negative compared with their positive narratives, $F(1, 40) = 21.57$, $p < .001$. In sum, patients were using context-appropriate emotion words in their stories about life events that

elicited different positive and negative emotions. As expected, schizophrenia patients' narratives about positive and negative emotional events did not differ with respect to appropriateness, $F(1, 37) = .29$, ns .

Narrative dimensions and sociality. Descriptive statistics for the narrative variables are presented in Table 2. We hypothesized that schizophrenia patients' narratives about negative emotional experiences would be less tellable than their narratives about positive emotional experiences as reflected by less grammar clarity, elaboration, and personal relevance. Consistent with the hypothesis, patients' negative emotion narratives were less grammatically clear than their positive narratives, $F(1, 37) = 11.82$, $p < .01$. However, patients' negative narratives tended to be more elaborated, $F(1, 37) = 3.99$, $p = .053$ than positive narratives, and the positive and negative narratives did not significantly differ from one another with in personal centrality. Thus, the hypothesis that negative narratives would be less tellable than positive narratives was only partially supported.

We also hypothesized that patients' negative narratives would be more detached than their positive narratives, as reflected by less meaning clarity, more vague trailers, and a greater need for clarification prompts from the interviewer. Schizophrenia patients' negative emotion narratives tended to have less meaning clarity, $F(1, 37) = 3.88$, $p = .056$, than their positive emotion narratives, but they did not significantly differ with respect to the number of vague trailers or clarification prompts from the interviewer. Thus, negative narratives were not markedly more detached than positive narratives.

Finally, we tested two competing hypotheses regarding the valence and sociality of emotional narratives. Consistent with the notion that positive emotions are important in social interactions and relationships, patients' positive narratives were more likely to involve other people, $F(1, 37) = 24.17$, $p < .001$, than their negative narratives.

Table 2
Descriptive Statistics for Narrative Variables in Study 1

Variable	Valence of Narrative	
	Positive	Negative
Emotion words		
Positive	1.38 (1.25)	0.32 (0.41)
Negative	0.07 (0.21)	0.91 (0.77)
Grammar clarity	1.26 (0.29)	1.45 (0.29)
Elaboration	2.62 (0.34)	2.45 (0.44)
Personal relevance	0.19 (0.25)	0.19 (0.29)
Meaning clarity	1.16 (0.18)	1.24 (0.24)
Vague trailer	0.29 (0.55)	0.34 (0.52)
Clarification prompts (n)	0.82 (0.41)	0.88 (0.13)
Appropriateness	1.35 (0.38)	1.31 (0.29)
Sociality	0.73 (0.34)	0.36 (0.31)

Note. Tabled values are means computed across the number of events described (ranging from 1 to 6) and number of questions asked (two positive questions; three negative questions). Standard deviations are in parentheses. Positive and negative emotion words are the average number of words across number of events and questions. For the remaining coded variables, higher numbers indicate greater deficits. Grammar clarity, elaboration, appropriateness, and meaning clarity were rated on a 3-point scale; personal relevance, vague trailer, and sociality were rated dichotomously as 0 or 1.

Discussion

The narrative approach allowed us to examine both what schizophrenia patients said about their emotional life events as well as how they described these events. Positive and negative narratives did not significantly differ with respect to their length; however, as predicted, the types of specific emotion words distinguished the valence of the narratives. That is, patients used more positive emotion words in their positive than negative narratives and more negative emotion words in their negative than positive narratives. This finding is consistent with prior studies showing that patients' responses are consistent with the stimulus presented (e.g., Kring & Earnst, 1999; Kring, Kerr, & Earnst, 1999).

Contrary to our expectations, patients' narratives about negative and positive emotional life events were not readily distinguishable along the dimensions of tellability and detachment. Indeed, patients' narratives about their negative and positive events were more similar than dissimilar. First, patients' narratives about negative events were not necessarily less tellable than their narratives about positive events. Patients' narratives about negative emotional events were less grammatically clear than positive emotional events, a finding that is consistent with studies that have examined referential language disturbances in speech about stressful topics (e.g., Docherty et al., 1998; Docherty & Hebert, 1997). However,

in terms of other aspects of tellability, patients' negative narratives were more elaborated than their positive narratives. Though Rotenberg et al (2005) did not explicitly examine differences between positive (happy) and negative (sad) narratives, elaboration ratings were slightly higher for sad than happy narratives. Our findings also indicate that positive and negative narratives did not differ with respect to personal relevance.

Second, patients' narratives about negative emotional experiences were not more detached than their narratives about positive emotional experiences. Rather, they tended to be less clear in meaning but did not pull for more clarification prompts nor end with more vague trailers. Very few of the narratives, whether positive or negative, pulled for clarification from the interviewer or ended vaguely, suggesting that schizophrenia patients are able to equally access and talk about their positive and negative emotional experiences.

We found that patients' narratives about positive events were more likely to directly involve other people than were their narratives about negative events. Thus, stories involving positive emotions were more likely to include a social context, whereas stories involving negative emotions were more likely to include only the patient.

Although these findings help to illuminate the types of events that elicit emotion in schizophrenia patients' lives and how they describe these events, the study has some key limitations. First, we did not include a neutral or nonemotional narrative against which we could compare the emotion narratives. Thus, it may be that emotion narratives differ more generally on these dimensions relative to nonemotional narratives. Second, we did not include a nonpatient group, and thus we do not know how patients' rendering of emotional life events differs from individuals without schizophrenia. Third, the structured and brief nature of the questions from Study 1 may have precluded patients from generating more lengthy narratives that would more clearly illuminate the narrative discourse dimensions. Indeed, the SDS was not designed to generate narratives about emotional life events, and these brief narratives were not ideally suited to reflect the narrative dimensions of tellability, detachment, and linearity. Fourth, we did not assess patients' intensity of experienced emotion recounted in the narratives.

Study 2 was designed to address these limitations and to extend the findings of Study 1. Specifically, as has been done in prior studies (e.g., Burbridge & Barch, 2002; Losch & Capps, 2006), we included a neutral condition (i.e., questions about one's typical morning routine, a recent meal, and driving directions to a regular destination) in order to ascertain whether valence differences in emotional narratives were distinct from nonemotional narratives. We also included a nonpatient comparison group against which patients' responses could be compared. In order to generate a richer narrative data set from which to test our hypotheses, we created a more in-depth interview explicitly designed to generate narratives about emotional life events. Finally, we asked patients to report on the intensity of the feelings that accompanied the narrated stories. We also refined the narrative coding system in a couple of important ways. First, we added a code for linearity, one of the key dimensions of narratives discussed by Ochs and Capps (2001). Our code was similar to that used by Losch and Capps (2006) to assess the integration of a sequence of events in the narratives. Second, we added an additional code for social context,

assessing the degree to which the narratives reflected social engagement (ranging from passive to active).

Hypotheses for Study 2

Consistent with previous studies that found few differences between patients and controls in their reported emotional experience, we expected that patients and controls would report comparable intensity of feelings associated with their narrated stories. Similarly, we expected that both patients and controls would use more positive emotion words in the positive narratives compared with either their neutral or negative narratives, and we expected that both groups would use more negative emotion words in their negative narratives compared with either their neutral or positive narratives.

However, we expected that schizophrenia patients' narratives would differ from controls' narratives in their length and context appropriateness. Specifically, we expected that patients' narratives would contain fewer total words and fewer emotion words relative to controls' narratives. In addition, we hypothesized that context appropriateness would distinguish the narratives of schizophrenia patients and healthy controls.

Given the findings from Study 1 in which we observed more similarities than differences between the positive and negative narratives, we hypothesized that the emotion narratives, regardless of valence, would be more likely to differ from the nonemotional (neutral) narratives than each other. That is, we predicted that emotional narratives, both positive and negative, would be less tellable and more detached than the neutral narratives. Stories about emotional experiences may well require a different level of discourse than nonemotional stories, such that the discourse is more hesitant, unclear, or awkward. Furthermore, reconstructing emotional events may render the story less clear in its meaning, whereas the rendering of everyday, nonemotional events may be more likely to be told in a clear and straightforward manner. Although we found few significant differences between positive and negative narratives in Study 1, we did find that the negative narratives differed from positive narratives in one component of tellability. That is, negative narratives were significantly less grammatically clear than the positive narratives. Thus, we expected that negative narratives in Study 2 would also be less grammatically clear than positive or neutral narratives. With respect to linearity, we expected that both positive and negative emotion narratives would be more linear than neutral narratives. That is, we hypothesized that emotional stories would more clearly pull for a sequence involving antecedent, event, and consequence than would stories involving everyday routines.

We also expected that schizophrenia patients would differ from controls on the narrative dimensions. Given prior findings showing that schizophrenia patients exhibit greater referential language disturbances than nonpatients when discussing emotional (i.e., stressful) topics, we sought to extend those findings here, predicting that patients' emotion narratives would be less tellable, more detached, and less linear compared with nonpatients' emotion narratives. Furthermore, one of the advantages to the narrative approach is that it has distinguished individuals with and without psychopathology (e.g., autism, depression, agoraphobia), and we sought to extend this to the study of schizophrenia.

In Study 2, our narrative interview probes specifically asked about the involvement of other people, and thus we did not expect that positive and negative emotion narratives would necessarily differ with respect to whether or not other people were involved. However, we did expect that the emotion narratives would be more likely to include other people and would be more socially engaged relative to the nonemotional narratives. We also predicted that schizophrenia patients' narratives would be less socially engaged than healthy controls' narratives, given that social withdrawal is a prominent feature among some patients with schizophrenia (e.g., Strauss et al., 1977).

Study 2

Method

Participants. Participants were 24 outpatients diagnosed with schizophrenia ($n = 22$) or schizoaffective ($n = 2$) disorder and 19 healthy controls. The patients (13 male and 11 female) were between the ages of 28 and 62, and *DSM-IV* diagnoses of schizophrenia or schizoaffective disorder were confirmed using the SCID-I/P (First et al., 1994). Neither of the two patients with schizoaffective disorder was in a mood episode at the time of testing, and all patients were taking neuroleptic medication at the time of testing. Exclusion criteria were identical to those in Study 1. A subgroup of 19 patients were interviewed for general psychiatric symptoms using the BPRS, rated on a 7-point scale ranging from 1 (*not present*) to 7 (*extremely severe*).² A positive symptom scale (sum of unusual thought content, disorientation, hallucinations, and suspiciousness items) and a negative symptom scale (sum of the blunted affect, emotional withdrawal, and motor retardation) were computed.

Control participants (10 male and 9 female) between the ages of 28 and 53 years were recruited via fliers posted in the community. Interested individuals phoned the laboratory and participated in a brief screening. Any individual who reported a personal or family history of schizophrenia spectrum illnesses, current mood or substance abuse, head trauma, stroke, or neurological illness was not invited to participate. Control participants invited to participate were interviewed using the Structured Clinical Interview for *DSM-IV* Axis I disorders, nonpatient edition (SCID-I/NP; First et al., 1994). Individuals were excluded if they reported a personal or family history of schizophrenia spectrum illnesses, current mood disorder, current substance abuse, head trauma, stroke, or neurological illness. Six controls were screened out following the SCID-I/NP due to past head trauma ($n = 1$); current mood episode ($n = 1$), current psychotic symptoms ($n = 1$), or current substance abuse ($n = 3$). Demographic and clinical characteristics of the participants are presented in Table 1.

Patients and controls did not differ with respect to age, $t(40) = 1.74$, $p < .09$; parental education, $t(37) = 0.36$; years of education, $t(41) = 1.91$, $p = .063$; ethnicity, $\chi^2(5, N = 43) = 1.35$; marital status, $\chi^2(2, N = 43) = 0.30$; or gender, $\chi^2(1, N = 43) = 0.10$. However, patients were less likely than controls to be employed, $\chi^2(1, N = 43) = 16.68$, $p < .001$.

Procedure. After informed consent was obtained, we conducted the clinical interview from which SCID and BPRS ratings were made. Next, we administered and audiotaped the narrative interview where we asked open-ended questions about positive

(happy, compassion, pride), negative (sad, fear, embarrassment, disgust), and neutral (driving directions, morning routine, last meal eaten) life events. Participants were specifically asked to "remember different types of experiences in as much detail as you can. For each question I ask about a different type of experience you have had, just try to remember as much as you can, such as where you were, what you were thinking at the time, who you were with, and what you were doing, and any other details that you can recall." Following the recounting of narratives about emotional life events, we asked participants to provide a rating of the intensity of their emotional experience at the time of the event, ranging from 1 (*not at all*) to 10 (*the most intense you could imagine*). All categories of questions (neutral, positive, negative) were counterbalanced across participants.

Coding of emotion narratives. The audiotaped interviews were transcribed by trained research assistants following standard transcription conventions (e.g., Ochs & Capps, 2001). Coders blind to the hypotheses of the study and diagnostic status of participants coded the transcripts for the narrative dimensions of tellability, detachment, and linearity. We also coded the narratives for their social context, appropriateness, number of words, and number of emotion words. As in Study 1, higher numbers for coded variables reflected a greater deficit or problem with one exception: social engagement, the coding of which is described more fully in the next section. We counted the number of emotion words using the same computer program (Oedipus; Levenson, 2005) from Study 1, and we coded appropriateness in the same manner as was done in Study 1.

The tellability dimension included codes used in Study 1: grammar clarity and elaboration.³ Detachment was assessed by coding meaning clarity as was done in Study 1. Linearity was coded dichotomously (present/absent) for the temporal sequencing of the story. Following convention (e.g., Bohanek et al., 2005; Ochs & Capps, 2001), a narrative was regarded as linear if the individual reported an antecedent circumstance prior to the event description and discussed some consequence following the event (i.e., antecedent-event-consequence-sequencing). If a narrative contained any other temporal sequencing of events, it was rated as nonlinear.

Sociality was rated dichotomously as in Study 1 (yes/no). We also rated the degree of social engagement on a 3-point scale (1 = *passive*, 2 = *mixed*, and 3 = *active engagement*). Passive social engagement was coded when the narrator included other people in the story but did not or only very minimally interacted with these people in the story (e.g., observing others while sitting on a park bench). Mixed social engagement was coded when the narrator passively observed others but also had at least some direct interaction with the others in the story. Active engagement was coded

² We were unable to conduct the clinical symptom interview with five patients due to constraints in the patients' schedules (i.e., they needed to leave before this interview could be completed).

³ We also coded the narratives for their personal relevance as was done in Study 1. However, all of the positive narratives and all but one of the negative narratives (a patient's story about sadness) involved a directly personal event, thus leaving no meaningful variance to examine. We did not code for vague trailers and clarification prompts given the extremely low base rate of these variables in Study 1.

when the majority of the narrated event focused on some type of direct interaction with another person.

Results

Data reduction, rater agreement, and analytical approach. As in Study 1, we computed means across individual emotion questions (three positive; four negative) to create positive and negative composites in order to reduce the number of dependent variables in the analyses and because we did not have hypotheses about individual emotions. We also created a neutral composite by computing the mean across the three neutral questions. One patient did not provide any responses to the neutral questions. For the dichotomously coded variables, kappas ranged from 0.70 to 1.00. For continuous variables, ICCs were also within an acceptable range of 0.76 to 1.00, and means across coders were subsequently computed for all variables.

We tested our hypotheses using 2 (group: patient, control) \times 3 (valence: positive, negative, neutral) repeated measures multivariate analysis of variance, with group as a between-subjects factor and valence (of the narrative) as a within-subjects variable. A Greenhouse-Geisser correction was used when assumptions for sphericity were not met, and corrected p values are reported. Corrected t values and two-tailed p values are reported when Levine's test for equality of variance was not met. Planned contrasts involved comparing positive with negative variables, and emotional (mean of positive, negative) with neutral variables. Effect sizes are reported as partial eta squared (η_p^2).

Word usage, context appropriateness, and reported intensity. As predicted, patients did not differ from controls in the reported intensity of either positive (patient $M = 8.76$, $SD = 1.27$; control $M = 8.59$, $SD = 1.09$) or negative (patient $M = 8.49$, $SD = 1.46$; control $M = 8.27$, $SD = 1.29$) feelings associated with the stories recounted in the narratives. This finding is broadly consistent with studies that find few differences between patients and controls in reports of experienced emotion in response to emotionally evocative stimuli.

Means and standard deviations for the narrative variables are presented in Table 3. To examine whether patients and controls differed in the average number of words used in their narratives, we conducted a 2 (group: patient, control) \times 3 (valence: positive, negative, neutral) repeated measures MANOVA with average number of words as the dependent variable. The valence main effect was significant, $F(2, 40) = 12.20$, $p < .05$, $\eta_p^2 = .38$, as was the Group \times Valence interaction, $F(2, 40) = 3.76$, $p < .05$, $\eta_p^2 = .16$. Both patients and controls used more words in their emotional (positive, negative) narratives than in their neutral narratives, $F(1, 41) = 24.87$, $p < .01$. Although patients' positive and negative narratives contained fewer words than controls, this difference was only marginally significant for the positive narratives, $F(1, 41) = 3.67$, $p = .063$. Patients actually used more words in the neutral narratives than controls, but this difference was not statistically significant.

To examine whether patients and controls differed in the average number of emotion words used in the narratives, we conducted a 2 (group: patient, control) \times 3 (valence: positive, negative, neutral) \times 2 (emotion word: positive, negative) MANOVA. Neither the group main effect nor any interaction with group was significant. However, the emotion word main effect, $F(1, 41) =$

9.23, $p = .004$, $\eta_p^2 = .18$, the valence main effect, $F(2, 40) = 93.43$, $p < .001$, $\eta_p^2 = .82$, and the Valence \times Emotion Word interaction were significant, $F(2, 40) = 69.69$, $p < .001$, $\eta_p^2 = .78$. As shown in Table 3, patients and controls used more positive and negative emotion words in their emotional narratives compared with the neutral narratives ($p < .001$). Both patients and controls used more positive emotion words in the positive narratives compared with the negative ($p < .001$) or neutral ($p < .001$) narratives. In addition, patients and controls used more negative emotion words in the negative compared with positive ($p < .001$) and neutral ($p < .001$) narratives. In sum, both patients and controls were using context-appropriate emotion words in their stories about life events that elicited different positive and negative emotions, and they used these words more often in the stories about emotion life events than stories about neutral life events.⁴

As in Study 1, we examined whether the content of the narrative was contextually appropriate to the questions being asked. Analyses of appropriateness revealed significant main effects for valence, $F(2, 39) = 15.00$, $p < .001$, $\eta_p^2 = .44$, and group, $F(1, 40) = 10.63$, $p < .01$, $\eta_p^2 = .21$, as well as a significant Group \times Valence interaction, $F(2, 39) = 4.32$, $p = .02$, $\eta_p^2 = .18$. Neutral narratives were rated as more appropriate to context than the emotional narratives for both patients and controls, $F(1, 40) = 27.21$, $p < .001$. Compared with controls, however, schizophrenia patients' positive, $F(1, 41) = 4.47$, $p = .041$, and negative, $F(1, 41) = 12.85$, $p < .01$, narratives were rated as less appropriate to the emotion being asked about. The groups did not differ in the context appropriateness of their neutral narratives.

Narrative dimensions. To assess tellability of the narratives, we examined grammar clarity and elaboration as was done in Study 1. For grammar clarity, both the valence main effect, $F(2, 39) = 32.57$, $p < .001$, $\eta_p^2 = .63$, and Group \times Valence interaction were significant, $F(2, 39) = 5.14$, $p < .01$, $\eta_p^2 = .21$. Grammar was less clear in the emotion narratives compared with the neutral narratives for both patients and controls, $F(1, 40) = 55.70$, $p < .01$. However, unlike our findings from Study 1, positive and negative narratives did not differ from one another in their grammar clarity. The interaction primarily reflects differences between the groups in the neutral compared with the emotion narratives, as shown in Figure 1. Patients' neutral narratives were not as clearly separable from the emotion narratives in their grammar clarity as were controls' neutral narratives. Although patients and controls didn't differ in the grammar clarity of their emotion narratives, patients' neutral narratives were less grammatically clear than controls' neutral narratives, $F(1, 40) = 3.94$, $p = .054$. Even though patients' negative narratives were rated as less grammatically clear than their positive narratives as we found in Study 1, this difference was not statistically significant. For elaboration, both the valence and group main effects were significant, $F(2, 39) = 13.56$, $p < .001$, $\eta_p^2 = .41$, and $F(1, 40) = 4.46$, $p < .05$, $\eta_p^2 = .10$, respectively, but the Group \times Valence interaction was not significant. Consistent with our prediction that emotion narratives would be less tellable than nonemotional narratives, emotion narratives were less elaborated than the neutral narratives, $F(1, 40) = 25.51$, $p < .01$. Furthermore, as was found in Study 1,

⁴ We also examined emotion word usage by creating a proportion score of emotion words/total words. Results from this analysis were identical to the analysis reported here.

Table 3
Descriptive Statistics for Narrative Variables in Study 2

Variable	Valence of narrative		
	Positive	Negative	Neutral
Number of words			
Patient	184.81 (132.55)	207.10 (116.38)	163.93 (173.70)
Control	256.63 (107.86)	258.51 (146.61)	150.13 (65.96)
Number of positive emotion words			
Patient	2.28 (1.14)	0.50 (0.71)	0.36 (0.40)
Control	2.63 (1.15)	0.75 (0.61)	0.32 (0.32)
Number of negative emotion words			
Patient	0.32 (0.35)	2.04 (1.38)	0.13 (0.24)
Control	0.39 (0.37)	2.23 (1.27)	0.14 (0.23)
Grammar clarity			
Patient	2.03 (0.67)	2.21 (0.76)	1.74 (0.60)
Control	2.17 (0.67)	2.05 (0.65)	1.40 (0.46)
Elaboration			
Patient	2.40 (0.69)	2.08 (0.67)	1.87 (0.76)
Control	2.00 (0.49)	1.85 (0.49)	1.50 (0.48)
Meaning Clarity			
Patient	2.06 (0.68)	2.17 (0.63)	1.76 (0.63)
Control	1.85 (0.54)	1.77 (0.55)	1.39 (0.41)
Linearity			
Patient	0.68 (0.31)	0.57 (0.33)	0.94 (0.92)
Control	0.42 (0.56)	0.39 (0.31)	0.92 (0.16)
Appropriateness			
Patient	1.15 (0.23)	1.27 (0.22)	1.04 (0.13)
Control	1.05 (0.11)	1.07 (0.11)	1.00 (0.00)
Sociality			
Patient	0.98 (0.07)	0.96 (0.13)	0.75 (0.39)
Control	0.98 (0.10)	0.97 (0.07)	0.85 (0.24)
Social Engagement			
Patient	1.65 (0.52)	2.08 (0.54)	1.25 (1.14)
Control	1.56 (0.44)	1.89 (0.45)	1.35 (0.90)

Note. Tabled values are means computed across the number questions asked (three positive questions; four negative questions; three neutral questions). Standard deviations are in parentheses. Number of words, as well as positive and negative emotion words, are the average number of words across number of questions. Grammar clarity, elaboration, appropriateness, and meaning clarity were rated on a 3-point scale, with higher numbers indicating greater deficits (i.e., unclear grammar, nonelaboration, inappropriate). Sociality was rated dichotomously as 0 or 1, with a higher number indicating less sociality. Linearity was coded dichotomously as 0 or 1, with a higher number indicating greater nonlinearity. Social engagement was rated on a 3-point scale, with a higher number indicating greater social engagement.

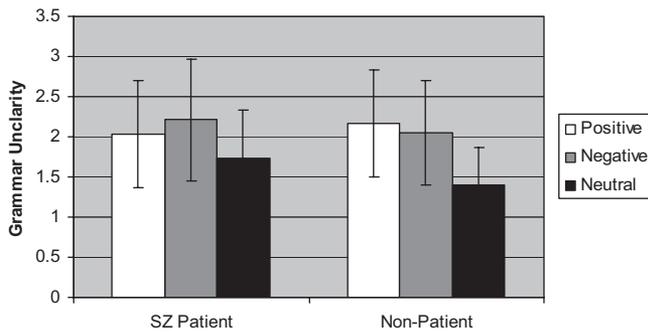


Figure 1. Grammar clarity in the narratives from Study 2. Higher numbers indicate less grammar clarity. Error bars indicate standard errors.

negative emotion narratives were significantly more elaborated than positive narratives, $F(1, 41) = 6.48, p = .015$, and this was true for both patients and controls. Collapsing across valence, patients narratives were less elaborated overall than controls, $F(1, 41) = 5.36, p = .026$.

To capture the dimension of detachment in the narratives, we assessed meaning clarity. This analysis revealed significant main effects for valence, $F(2, 39) = 15.62, p < .001, \eta_p^2 = .45$, and group, $F(1, 40) = 4.25, p < .05, \eta_p^2 = .10$, but an insignificant Group \times Valence interaction. Consistent with our predictions, both positive and negative emotion narratives had significantly less meaning clarity than neutral narratives, $F(1, 40) = 30.94, p < .01$, and this was true for both groups. Positive and negative narratives did not differ from one another in their meaning clarity for either patients or controls. As predicted, the meaning in all patients' narratives was not as clear as the meaning in controls' narratives, $F(1, 41) = 4.27, p = .045$.

An additional dimension to narrative discourse involves the extent to which stories follow a linear sequence. Analyses of the linearity of the narratives revealed significant main effects for valence, $F(2, 39) = 63.11, p < .001, \eta_p^2 = .76$, and group, $F(1, 40) = 6.31, p < .02, \eta_p^2 = .14$, as well as a significant Group \times Valence interaction, $F(2, 39) = 4.26, p = .021, \eta_p^2 = .18$. Consistent with our predictions, emotion narratives were more linear than neutral narratives for both patients and controls, $F(1, 40) = 104.62, p < .001$. Also consistent with predictions, schizophrenia patients' positive, $F(1, 41) = 9.01, p < .01$, and negative, $F(1, 41) = 3.89, p < .05$, narratives were less linear compared with controls' positive and negative narratives.

Social context in the narratives. We expanded our assessment of social context in Study 2, examining sociality and social engagement. With respect to sociality, the valence main effect was significant, $F(2, 40) = 6.12, p < .05, \eta_p^2 = .23$, but contrary to our predictions, neither the group main effect nor Group \times Valence interaction achieved significance. As expected, both patients' and controls' emotion narratives were more likely to involve other people compared with their neutral narratives, $F(1, 41) = 13.53, p < .01$. Findings were similar for social engagement, with the analysis revealing a significant main effect for valence, $F(2, 37) = 8.01, p < .01, \eta_p^2 = .31$, but no significant effects involving group. For both patients and controls, their emotion narratives were more actively socially engaged than their neutral narratives, $F(1, 38) = 7.17, p = .011$. In addition, negative emotion narratives were more actively socially engaged than positive emotion narrative, $F(1, 38) = 11.79, p < .01$. Thus, for both patients and controls, emotion narratives were more likely to involve other people and reflect greater social engagement than neutral narratives. Contrary to expectations, however, schizophrenia patients were as likely as controls to tell stories involving other people and in a similarly socially engaging manner.

Discussion

Study 2 was designed to address the limitations and extend the findings from Study 1 on the ways in which schizophrenia patients narrate their emotional life experiences. Similar to previous studies that have found few differences between schizophrenia patients and controls in reports of experienced emotion, patients did not differ from controls in their rated intensity of the emotional experiences that corresponded to the events described in the narratives. That is, schizophrenia patients' narratives about emotional life events were associated with comparable intensities of experienced emotions. This finding extends the literature on emotional experience in schizophrenia, suggesting that the life events that trigger conversations about emotion in schizophrenia patients are linked to comparable reports of experienced emotion relative to individuals without schizophrenia. We acknowledge, however, that these reports constitute retrospective ratings of experienced emotion (i.e., how did you feel back when the event occurred?). In future studies, it would be informative to ask participants about the feelings that retelling the events evoke in the moment (e.g., Cohen & Docherty, 2005; St-Hilaire, Cohen, & Docherty, 2007).

Contrary to our expectations, schizophrenia patients' narratives were not necessarily shorter than controls' narratives. Patients' positive narratives tended to be shorter than controls' narratives, but their negative and neutral narratives were not significantly

shorter than controls' narratives. In addition, the two groups did not differ with respect to the number of specific emotion words uttered in the narratives. However, our findings regarding emotion word usage and "match" with the narrative type were consistent with the findings from Study 1. That is, both patients and controls used more positive emotion words in their positive emotion narratives relative to negative or neutral narratives and both groups used more negative emotion words in their negative narratives relative to the positive or neutral narratives. The proportion of emotion words that participants in the present study used in their narratives was greater than or equal to the proportion of emotion words in similar studies with schizophrenia patients (St-Hilaire, Cohen, & Docherty, 2007), college students (Bohanek et al., 2005), writers and physicists (Djikic, Oatley & Peterson, 2006), physician-patient interactions (Shields et al., 2004), mothers' descriptions of the birthing process (Bylund, 2005), and parent-child interactions (Aldrich & Tenenbaum, 2006; Fivush & Wang, 2005).

Consistent with our findings from Study 1, positive and negative narratives were equally appropriate with respect to the emotion question being queried about, and this was true for both patients and controls. However, both groups' emotion narratives were rated as less contextually appropriate than their neutral narratives, and schizophrenia patients differed from controls in the contextual appropriateness of their emotion narratives. Although schizophrenia patients' narratives about emotional life events included specific emotion words that were appropriate to the events being asked about, their stories were nonetheless rated by observers as being less contextually appropriate. Ratings of appropriateness were likely influenced by the clarity of the narratives. Indeed, meaning clarity was significantly correlated with context appropriateness across patients' emotion narratives, $r(22) = .49, p < .01$, and thus it is perhaps not surprising that patients' emotion narratives were rated as less contextually appropriate than controls' given that these narratives were also less clear in their meaning.

Extending from the findings in Study 1, we hypothesized that both positive and negative emotion narratives would be less tellable, more detached, and more social and socially engaged compared with nonemotional narratives, and we expected this to be true for both patients and controls. These hypotheses were confirmed. Both groups' narratives about emotional events were less tellable, as marked by less clear grammar and less elaboration, compared with their narratives about nonemotional events. Although we found that patients' negative narratives were less grammatically clear than positive narratives in Study 1, we did not replicate this finding in Study 2. It may be the case that the differences in interview method (clinical vs. narrative specific) and emotions queried about (simple vs. both simple and complex) rendered the differences in grammar clarity less salient between positive and negative narratives. That is, our Study 2 interview pulled for lengthier narratives and asked about more complex positive emotions such as compassion and embarrassment that may have contributed to the similarities in grammar clarity between positive and negative narratives. Consistent with our hypothesis, both groups' emotion narratives were more detached than the neutral narratives as evidenced by less clarity in their meaning. Finally, both groups' emotion narratives were more linear than the neutral narratives in that they were more likely to be told with a

temporal sequence involving an antecedent, event, and consequence.

Although schizophrenia patients didn't differ from controls in the length of their narratives or with the "match" in emotion word usage with type of narrative, patients did differ from controls in how they rendered their stories about emotional life events. Indeed we confirmed our hypotheses that the narratives of schizophrenia patients would be less tellable, more detached, and less linear compared with the narratives of controls. More specifically, patients' narratives, both emotional and nonemotional, were less tellable compared with controls' narratives as indexed by less elaboration. With respect to detachment, patients' narratives had less clear meaning than the controls' narratives. Finally, patients' positive and negative narratives, but not their neutral narratives, were less linear compared with controls' emotional narratives.

Contrary to our expectations, controls and patients did not significantly differ with respect to either the sociality of their narratives or the degree of social engagement embedded in the narrated events. Both patients and controls revealed more active social engagement in their narratives about emotional experiences. Contrary to the findings from Study 1, narratives about positive emotional experiences were not more likely to include other people than narratives about negative emotional experiences. However, our in-depth interview for Study 2 specifically asked participants to recount stories that included other people. At the same time, our neutral interview questions may have limited the extent to which participants discussed social interactions by asking about events that may be less likely to involve other people (morning routine or driving directions). Thus, our findings with respect to social context and nonemotional narratives must be interpreted with caution.

General Discussion

In the present studies, we sought to extend our understanding of emotion disturbances in schizophrenia patients by examining how patients describe and make sense of their emotional life experiences. Adopting a narrative approach allowed us to assess both what patients say about their emotional life events and how they say it. Whereas studies that present emotionally evocative stimuli typically find few differences in reports of experienced emotion, our findings suggest that schizophrenia patients differ in subtle yet meaningful ways from healthy individuals when they narrate their emotional life events. Broadly speaking, our two studies demonstrate that schizophrenia patients are capable of recounting stories of life events that trigger different emotional experiences, and they do so in a way that "matches" the interview questions. That is, patients can describe past life events that have triggered positive and negative emotions, and they use context-appropriate positive and negative emotion words in their stories about these events. However, the telling of life events, both emotional and nonemotional, is fraught with difficulty for schizophrenia patients, and the narrative approach brings these difficulties into sharp relief in ways that other methods cannot capture.

In Study 1, we compared schizophrenia patients' narratives about positive and negative life events and found more similarities than differences. That is, patients' positive and negative narratives were equally lengthy, personal, appropriate, engaged, and elaborated. Narratives about negative emotional experiences tended to

have less clear meaning than narratives about positive emotional experiences, consistent with work by Docherty and colleagues (Docherty et al., 1998; Docherty & Hebert, 1997), who have found that schizophrenia patients exhibit more referential language disturbances (e.g., uncertain or unspecific references; ambiguous word meanings) when discussing stressful topics compared with nonstressful topics. We also found that negative narratives were significantly different from positive narratives in their grammar clarity, and that narratives about positive events were more likely to involve other people than narratives about negative events. Although these findings provide an important first step towards understanding the content and form of patients' narratives about emotional events, the study was limited in a number of ways. First, the narrative samples were drawn from a clinical interview rather than a narrative interview. As a consequence, the responses were brief and thus limited our ability to examine the narrative dimensions in greater depth. In addition, we did not include a comparison group with which we could compare patients' responses or a nonemotional condition with which we could compare the emotion narrative responses.

Study 2 addressed these shortcomings and extended the findings from Study 1 in several ways. In general, our findings revealed both similarities and differences between schizophrenia patients and controls in their life event narratives. With respect to similarities, both patients' and controls' emotion narratives differed from nonemotional narratives on all of the narrative discourse dimensions, as well as in length, appropriateness, and social context. That the emotional narratives were longer than the neutral narratives may well reflect differences in the questions we asked rather than differences in emotional valence, an issue we return to in greater detail below. In addition, both patients and controls narrated their negative and positive emotional life events in ways that were less tellable and engaged but more linear and social compared with nonemotional life events. Across both studies, patients' narratives about negative emotional events were more elaborated than their narratives about positive emotional events, a finding that was also observed among healthy controls in Study 2. It may well be that the discourse that supports the telling of negative emotional life experiences requires more context and elaboration. Finally, schizophrenia patients and healthy controls were equally likely to tell stories about emotional events that involved others and were socially engaging.

Despite these similarities between groups, the narrative approach also illuminated important differences in the ways schizophrenia patients and controls narrated their life events. Schizophrenia patients' narratives tended to be less lengthy than controls, and this was particularly true for their positive narratives, even though patients did not use fewer specific emotion words than controls when recounting stories of positive life experiences. Although the positive and negative narratives were rated as equally appropriate to context across both studies, in Study 2 we found that schizophrenia patients' narratives were less appropriate (though not wholly inappropriate, cf. Table 3) to the emotion context of the question compared with controls' narratives, perhaps reflecting the fact that patients' narratives were also rated as having less clear meaning.

Schizophrenia patients also differed from healthy controls in how they rendered their stories about life events and, by implication, the meaning that they likely derive from them. Specifically,

patients' narratives differed from controls' narratives along the narrative discourse dimensions of tellability, detachment, and linearity. Schizophrenia patients' narratives about all life events, emotional or not, were less elaborated and had less clear meaning than healthy controls' narratives. Thus, schizophrenia patients had a particularly difficult time recounting life events that were tellable and connected, regardless of whether the event involved a particular emotion experience. However, patients' emotional narratives were distinguished from controls' narratives with respect to their linearity. Thus, schizophrenia patients had a difficult time recounting their emotional life stories in a manner that yielded a clear sequence of events, including what came before the event and what happened afterwards. This was not the case for everyday activities where schizophrenia patients recounted these events with comparable linearity to controls.

Our findings are not entirely consistent with prior research that finds greater referential language disturbances in the negative, but not positive or neutral, speech samples of schizophrenia patients relative to healthy controls (e.g., Cohen & Docherty, 2005; Docherty et al., 1998, 1999). The reasons for the differences are likely a function of the different methodological approaches. Research from the "affective reactivity" tradition involves asking open-ended questions about nonstressful ("good memories, pleasant times") and stressful memories ("bad memories, unpleasant times") defined by the respondents (Docherty & Herbert, 1997). By contrast, the present studies used standardized questions to probe for a single narrated story for each of a number of specific positive (happy, proud, compassion) and negative (fear, sad, embarrassment, disgust) emotions. The specificity of referential language disturbances, such as meaning clarity, for negative emotion narratives appears to be less robust when questions about specific emotional experiences comprise the interview. However, the narrative approach permitted us to examine other discourse variables besides referential deficits, including grammatical structural clarity, elaboration, and the linearity of the narrative, and these discourse dimensions do not appear to be more strongly impaired in narratives about negative emotional events.

Taken together, the narrative approach adopted in the current studies offers important insights about the emotional lives of individuals with schizophrenia. Consistent with prior research (e.g., Kring et al., 2003, 1993), we found that the content of narrated emotional life events was generally similar between schizophrenia patients and controls. Individuals with schizophrenia conveyed stories about emotional life events that were socially embedded, personable, and drew from an emotion-laden vocabulary. At the same time, individuals with schizophrenia exhibited some trouble clearly conveying these emotional events to others in narrative discourse. Given that an important part of our emotional lives is sharing and communicating our life experiences with others, one can readily imagine the social impairment that patients with schizophrenia may experience when trying to narrate their stories to others. Indeed, an important future direction for research will be to examine the social implications of these impairments in narrative discourse dimensions.

It is important to acknowledge limitations to our two studies. First, as mentioned, the clinical interview from Study 1 was not designed to elicit narratives about emotional life events, and thus the responses we obtained may not have fully captured patients' capability to narrate these events. We addressed this issue in Study

2 with an interview specifically designed to elicit narratives. Despite the different approaches in these two studies, many of the findings converge. Second, the sample sizes in both studies were not terribly large, so we must be cautious in making generalizations. Although post hoc power estimates ranged from .48 to .86 (Faul & Erdfelder, 1993), our analyses may still have had insufficient power to reject the null hypothesis. At the same time, we did have sufficient power to detect between-group effects and effects due to the narrative valence manipulation. Nevertheless, it will be important to replicate these findings in a larger sample to bolster the studies' generalizability. Moreover, we did not have a sufficient sample of women in the studies to make a meaningful comparison by gender, and this remains an important issue for future research. Future studies should examine the ways in which men and women may differ in the narration of emotional events. Third, our neutral condition, though providing an important point of comparison with the emotion narratives, may have precluded our ability to detect some within- and between-group differences. As discussed earlier, two of the three neutral questions (directions to a familiar location, morning routine) were less likely to elicit responses involving a social context than the third neutral question (last meal eaten) and the emotion questions. In addition, the neutral questions may have differed from the emotion questions on other important dimensions. Asking about a morning routine or driving directions, for example, may more explicitly pull for a linear sequence of events and thus may account for our findings regarding linearity. Generating a nonemotional or neutral condition in studies of emotion that is comparable to emotion conditions in all aspects but valence remains a critical issue for the field. For example, a common method to elicit emotion in a laboratory context is to provide emotional and nonemotional pictures. Although the positive and negative pictures can be equated on arousal, the neutral pictures nonetheless differ from the valenced pictures on both valence and arousal, thus leaving open the possibility that observed differences in responses may not be due solely to valence. Fourth, we did not include a comparison psychiatric patient group with known emotional deficits (e.g., major depression, bipolar disorder), which would have allowed us to examine diagnostic specificity of the findings reported here.

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