From sense to meaning: Narrative Function Coding System for the experience of illness

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Abstract

Purpose – Consistent with current literature, which highlights the role of narration as a key tool for exploring the processes by which people construct the meaning of their critical experiences the authors propose a theoretical and methodological model to analyse the narratives of illness and identify any innovative aspects. The generative model of mind presented refers to a semiotic, narrative and socio-constructivist perspective according to which narration constitutes one of the possible processes by which the affective and pre-verbal sense of experience is transformed into a meaning that can be symbolized and shared.

Design/methodology/approach – The onset of an illness represents a critical event which interrupts a person's life narrative, shattering his/her biographical continuity and undermining any assumptions of him/herself and the world. In particular, the model proposes a method of analysis, currently absent in literature, of the narrative interview Narrative Function Coding System (NFC) in order to grasp the ways by which four main narrative functions, namely psychic functions, are classified: the search for meaning, the expression of emotions, the temporal organization and the orientation to action.

Findings – NFC appears to be able to capture the complexity of the narrative process of construction of illness' sense-meaning making process, identifying both representative modalities of good functioning, which express a gradual process of connection with the variability of the experience, and modalities that express moments of disorganization and rigidity, which can persist throughout the time of treatment. The NFC represents not only a method for analysing illness narratives but also a method for tracking and monitoring the process of clinical intervention and change.

Originality/value – The sense-meaning making process perspective within the narrative socio-constructivist and semiotic framework of analysis proposed by NFC is currently absent in the literature. NFC can be a device for analysing the narrative process of sense-meaning making both for its use for clinical and preventive purposes. In addition we believe that this method, which focuses on the "form" and "way" of narratively constructing the subjective experience, rather than on the specific thematic content, can be used with all types of illness narratives, in particular the longitudinal one to explore the changes in sense-meaning making process.

Keywords Narrative, Sense-meaning making, Qualitative method, Semiotics, Illness experience

Paper type Research paper

Narrative in the context of illness: a point of view transformation

Starting from a longitudinal narrative study conducted with women who have passed through a process of the diagnosis and treatment of breast cancer (BC) (Martino *et al.*, 2022a, b), the authors, in this paper, propose and discuss a model of the analysis of an illness narrative based on the study of narrative functions. These functions are intended as functions of the construction and transformation of meaning, by which the mind mediates the adaptation to experience. This method of analysis provides a useful tool for understanding the natural history of the meaning, adaptation and integration to illness.

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In the medical context, from the birth of the bio-psycho-social model (Balint, 1957; Engel, 1977) up to the most current forms of Narrative Based Medicine (Charon, 2001; Greenhalgh and Hurwitz, 1999) and the Health Initiative (Bodenheimer *et al.*, 2002; Coleman *et al.*, 2009), we have been witnessing a revolution in the way of considering the patient, the illness, the treatment process and the healthcare relationship. The latter, in fact, begins to be conceived as an interactive and changing relationship, in which the patient is the expert in terms of his/her own personal experience of the illness and the doctor is called on to integrate his/her response, based on fundamental evidence-based protocols, involving a process of cooperation with the patient aimed at promoting his/her participation in the care and in the definition of his/her quality of life.

This transformation has found its first conceptual organization in the fundamental distinction between disease, illness and sickness proposed by Kleinman in the 1970s (Kleinman, 1988). This representation highlights how in the experience of living with an illness three distinct but connected dimensions are intertwined: the medical dimension of the illness, and therefore the organic, bodily and/or functional dysfunctions that generate the symptoms (the disease), the subjective experience of the 'sick individual, with all the changes in individual and social functioning that the disease entails (the illness), and, finally, the expectations, beliefs and social norms related to the social role of the sick person (the sickness).

Therefore, the necessary attention paid to the medical aspects of the pathology is not sufficient, on its own, to grasp the entirety of the individual's experience of illness, whose subjective and social dimensions find a privileged channel of exploration in the narratives that the person makes of him/herself and his/her experience and how his/her life has been transformed by the illness (Bolmsjö and Hermerén, 2001; Greenhalgh and Hurwitz, 1999; Jackson, 1998; Hillmann, 1984; Kleinman, 1988; Radcliffe *et al.*, 2013; Murphy, 1990; Morris, 2001).

The critical illness experience, narrative device and meaning-making processes

The onset of a life-threatening illness constitutes a critical and potentially traumatic experience which, from a constructivist (Neimeyer, 2006) and semiotic perspective of the mind (Salvatore and Freda, 2011, 2015a; Valsiner, 2001), generates a sudden alteration of systems of meaning that support the relationship between the subject and the external world (Horowitz, 1993; Janoff-Bulman, 2004a, b; Joseph and Linley, 2005) and a crisis of the sense of continuity of the self-identity (Freda and Martino, 2015; Frank, 1998; Neimeyer, 2006, 2019). This crisis is also expressed in an alteration of the temporal perspective that becomes characterized by a sense of fragmentation, a feeling of the suspension of life (Rasmussen and Elverdam, 2007) and an uncertainty about the future (Hjelmblink and Holmström, 2006).

The illness diagnosis therefore produces an autobiographical discontinuity, which requires a narrative work through which to create a space between the pervasiveness of the emotions and the self, to give an order and a shareable shape to these emotions, and ultimately to reorganize the meanings on which the coherence of one's life story is based (De Luca Picione *et al.*, 2017, 2018; Valsiner, 2007; Zittoun, 2006).

In fact, in the last thirty years narration has become an elective tool to explore and promote the processes of the construction of meaning, and through them to support a cognitive and emotional processing of the experiences of illness (Freda and Martino, 2015; Martino *et al.*, 2015; Bruner, 1991; Neimeyer, 2006; Pennebaker *et al.*, 2010; Smorti and Fioretti, 2016). The importance of the story that the patient makes of his/her illness and suffering is anchored, in particular, to the work proposed by the anthropologist Byron Good, who takes up Cassirer's thesis that symbolic forms are not more or less accurate reflections of reality, but that they actively create the different worlds in which we know and experience reality (Good, 1993). In other words, it is through the narration of him/herself and of his/her own

experience that the person can reconstruct his/her sense of the world and of him/herself put in crisis by the illness.

In fact, through its function of description, reorganization of disorder and intertwining, narration generates connections between events, states of mind and relationships (Freda, 2008; Hermans and Dimaggio, 2004; Neimeyer, 2006). In this way it transforms and constructs meanings allowing the patient to understand the changes (Baumeister, 1991) and to reconfigure normative and regulatory forms to the violation of the canon (Bruner, 1991). Even from a cognitive perspective, meaning-making processes are understood as processes through which subjects arrive at an understanding of changes, investing energy and commitment in reducing the discrepancy between the situational meaning (the meaning attributed to a critical/stressful event) and the global meaning (global beliefs and goals that orient the life of the person) (Atkinson, 1998; Joseph and Linley, 2005; Janoff-Bulman, 2004a, b), transforming the vision of the event in order to adapt it to the current worldview or, by changing the world view, to integrate the event (JanoffBulman, 2004a, b).

The literature shows how the process of the construction of the meaning of illness is linked to health outcomes and the reduction of symptoms (Park *et al.*, 2008; Tolstikova *et al.*, 2005), representing a defence against the development of anxiety and a reduction of its effects (Davis *et al.*, 1998, 2000). A successful outcome in the ability to transform meanings therefore represents a fundamental base in the process of adaptation to the illness, in the integration of necessary changes and in the promotion of well-being (Martino *et al.*, 2022a, b; Carlick and Biley, 2004; Mattingly and Garro, 2000; Frank, 2000; Wiles *et al.*, 2008).

Accordingly, the experience of illness generates a request for meaning from the sick person or, we could say, a psychic urgency for meaning, thus supporting the importance of the use of the narrative device within contexts of care with a double value: both as a natural device, a knowledge of the patient's experience (homo narrans), and as a clinical support device (Martino *et al.*, 2022a; Bulow, 2003; Bury, 2001; Hjelmblink and Holmström, 2006; Rasmussen and Elverdam, 2007).

The "MSN triangle" (meaning – sense – narrative functions): the perspective of the semiotic theory of affects

The semiotic perspective of the mind allows us to consider the processes of signification in the light of the relationship between affects, understood as primitive and embodied meanings, and thought (Salvatore and Freda, 2011; Gallagher, 2006; Depraz *et al.*, 2000; Matte Blanco, 1975).

Sense-making is described within this perspective as a constitutive function of embodied cognition and refers to generating subjective sense with respect to an object experienced as endowed with substantiality and value (Salvatore, 2012, 2016; Martino *et al.*, 2022c), i.e. as a fact of the world that has existential relevance for the subject. Here we mean "giving sense" as a primitive process of subjectivation by which an object of reality becomes affectively relevant for the self. Sense-making can be interpreted as a function that, starting from an affective, visceral and primitive investment of the experience – which originates from the activation of the body in response to an experience – creates a context of sense and proceeds gradually, through the connection with thought, towards the creation of meaning (Salvatore and Freda, 2011). Affect therefore functions as the first system of the production of sense in a pre-reflexive, generalizing and holistic way (Martino *et al.*, 2022c).

The discretization of affects and their connection with thought is articulated in the gradual passage from sense to meaning: this process makes it possible to represent an experience within a symbolic and shareable shape that gives form to a narrative.

Let's take an example to clarify this process: a person who receives a diagnosis of BC enters into an emotional relationship with the experience and we hypothesize that he/she could feel it – at a bodily, visceral and unsymbolizable level – as annihilating and overwhelming. We use these adjectives only for explanatory purposes, since they describe

the sense of an experience that, in reality, being placed at a primitive and bodily level, cannot be translated into words. This first affectivization of the experience – which, as said, is the primitive way of giving it sense – orients the meaning that will subsequently be created/attributed, and which can be represented, for example, by this way of narrating one's own experience of illness.: "Since I received the diagnosis, the world has collapsed on me"; or, if the process of transformation from sense to meaning moves on levels of greater discretization and complexity, by this: "when I received the diagnosis, I felt that my life was changing in many areas and that I would have to reorganize many things: work, family, friends". Let's see how, depending on the transformation process of the affective experience, the meaning can be more or less differentiated, organized and complex. In the first example, in fact, the narrated meaning maintains the generalizing quality typical of sense (everything is destroyed, nothing is the same as before), while in the second example it is possible to contextualize the affective meaning by linking it to specific areas of one's life and differentiating between the before and after illness.

In this perspective, based on the concept of the embodied cognitive system (Gallese, 2007), meaning can be understood as an associative process between a sign and an object of reality or of the internal world; it emerges from sense, that is, from the way in which the signs are connected, and has to do not so much with the content as with the potentiality of the link of association between signs. We use the term "sense-meaning-making" to identify this process of the construction of meaning starting from sense, on the one hand by highlighting the relevance of our model with respect to the scientific literature on meaning-making processes, on the other by introducing a semiotic-affective perspective of meaning, which takes into account the role of emotions in the processes of knowledge and the construction of reality.

In conclusion, we therefore propose a perspective aimed at conceiving psychological processes as contingent and dependent on the field of affective and contingent sense in which meanings are produced. Meaning is generated in the relationship; it has to do – also – with the personal story of each person; it is placed in time, and in the relationship with time it finds its transformation, implying a continuous process of the negotiation, assimilation and integration of new meanings (De Luca Picione, 2021; Zittoun, 2021).

Narrative as a function of the mind

We believe that the relationship between sense and meaning can be better understood by referring to the concept of "function", understood as a psychic element bridging sense and meaning (see Figure 1).

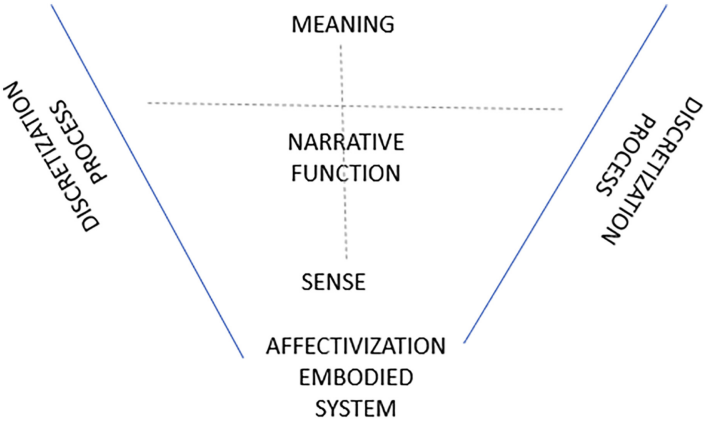

Figure 1.
The "discretization" process of mind

This concept has ancient origins in psychology and arises within the functionalist paradigm (Angell, 1907; Carr, 1930; Dewey, 1896; James, 1890) which, embracing an evolutionary vision of the human mind, considers psychic phenomena as useful functions to pursue an adaptation to the environment. Subsequently, other authors have also developed the concept of function: we think of Piaget (1964), who describes assimilation and accommodation as two functions necessary to proceed in the development stages; Vigotskji (1962), who describes mental functions and their evolution in relation to the social context; and the authors of the psychodynamic perspective, who describe some mental functions necessary to transform and make the emotional experience representable, including, for example, the alpha function of Bion (1962) or the reflexive function introduced by Fonagy and Target (1997).

In general, with the notion of function we introduce the idea that a psychological system is capable of carrying out psychological processes of transformation, elaboration and reorganization in view of a purpose/objective that allows the organism to stay alive (stability) and/or develop and increase their interaction with the context (growth).

Transversely to the different perspectives that deal with them, psychic functions are described as having the purpose of allowing an adaptation to the context and of integrating experiences through the transformation of internal and/or external reality.

This link between function, transformative processes and adaptation to context can help us to understand narration in its dimension of function rather than that of content: we can imagine narration as a function of the mind which, through the transformation of experience over time, supports psychic adaptation, in particular in the face of those experiences which, being placed outside the ordinary, require a psychic work of reorganization and integration in order to be elaborated (see Figure 1).

Doise (1986) has already considered four functions performed by narration: the psychological or intrapersonal function, which deals with how the individual interprets the world; the interpersonal function, which considers the character of the interaction between individuals, considered as interchangeable partners in a situation; the positional function, which considers the different social positions of the actors in situational interactions; and the ideological function, which considers broader belief systems (Doise, 1986; Murray, 2007; Neimeyer, 2006).

More recently, Schiff (2012, 2017) has suggested adopting a functional approach to storytelling in psychology. The conceptual turning point proposed by the author is "from narrative to narrating" and highlights how narrative processes constitute expressive actions that unfold in space and time. The fundamental narrative function is to search for meaning, which has dimensions which are declarative (narrating I make my subjective experience real), temporal (narrating I recover the past, I dignify the present and I project myself into the future) and spatial (the narration takes place in one social space, it is always a narration to someone, real or imaginary, who is other than me).

In the semiotic perspective that we propose, narration, like every mental act, originates from the embodied experience and, through processes of speech and semiotic connection, performs the function of a gradual transformation and discretization of the sense of experience, organizing the mental contents so that they can be understood, integrated and meant. In the process of the construction of meaning, a connection is made between the general and the particular, which is not only, as proposed by Janoff-Bulman (2004a, b), that between the global meaning and the situational meaning – a connection that allows the reconstruction of the schemes of oneself and the world questioned by critical experience – but also, and above all, that between the generalizing function of affect and the discretizing and differentiating function of narration (Martino *et al.*, 2013). Where affect homogenizes and does not allow for the recognition of differences, the narrative function, starting precisely from the expression of the affects, differentiates and integrates the elements of critical experience

(events, mental states and relations), promoting a process of the integration of discontinuity and action orientation (see Figure 1) (Salvatore and Freda, 2011, 2015a, b).

Narrative function(s)

By accepting the hypothesis of a transformative function of narration, we can try to organize this function into specific tasks, that is to say we can try to identify the different trajectories along which narration operates its role of the transformation of the experience of illness, and the different dimensions which, through its unfolding over time, it discretizes, connects and organizes (Collado and Boden-Stuart, 2022; Watson, 2008).

Starting from the study of the scientific literature presented and from our previous research about the adjustment and management of different experiences of illness (De Luca Picione *et al.*, 2019, 2022a, b), we propose four distinct narrative functions, useful to articulate the relationship between the person and his/her experience of illness over time:

(1) Organization of temporality

(2) Search for meaning

(3) Emotional expression

(4) Orientation to action

In this paragraph we will present the narrative functions, anchoring them to the literature and focusing on the dimensions on which the process of transformation and semiotic connection operates (What). In the following paragraphs, we will present the declination of each function in its different Sense-Meaning-Making Modality (SMMM) (How), which expresses the different levels of the discretization and complexity of the transformative process (Figure 2). In fact, as we have said, we believe that narration is one of the possible devices through which sense is transformed into meaning; therefore, it has the function of transforming the affective investment of experience (Bion, 1962) towards a process of the integration/elaboration of the

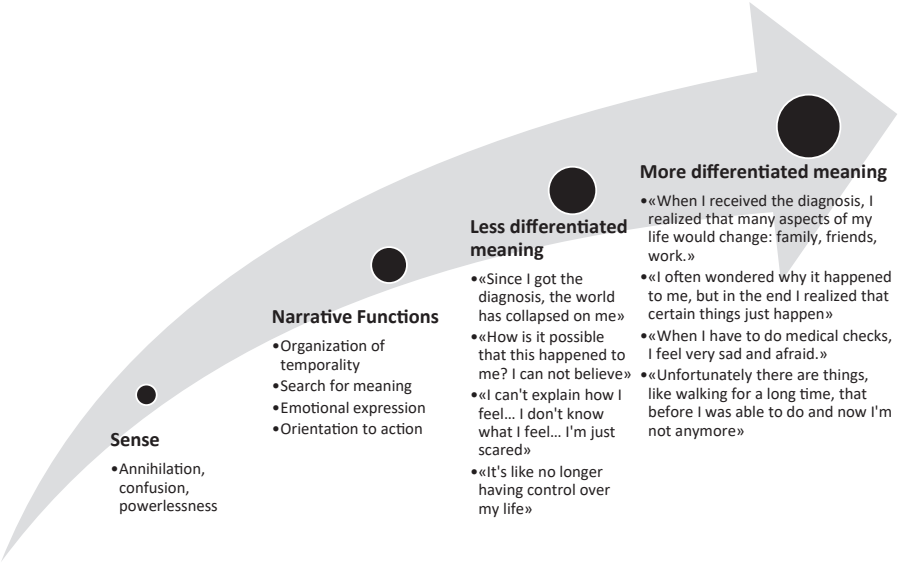

Figure 2.
An example process of sense-meaning making

potentially traumatic event of disease (see Figure 2) (Martino *et al.*, 2022a, b). This transformative process – which we have called Sense-Meaning-Making – can be more or less effective in discretizing the affects, and therefore can give rise to more or less complex and differentiated meanings, which in the next paragraphs we will describe, for each narrative function, in its different SMMM.

Organization of temporality

This function refers to narration as a process of the temporalization or *emplotment* of the experience of illness (Bulow, 2003; De Luca Picione, 2021; Zittoun, 2021). This process refers both to one of the main properties of narration described by Bruner (1991), namely "temporality", with respect to the coincidence between both narrative time and human time proposed by Ricoeur (1979). Narration has the function of connecting events within a significant temporal framework into which it is possible to recognize a "before" and an "after" and identify turning points. As Williams (1984) points out, narrating about one's illness implies an attempt to understand its origins and to "reconstruct" the history of one's life, so that the illness can be integrated into it and explained in the light of the remembered past and the imagined future. In this sense, through narration people can frame the disease in the time of their existence, placing it in a dimension in which the link between past, present and future can acquire a subjective meaning (Freda and Martino, 2015; Martino *et al.*, 2015; Brockmeier, 2000).

Search for meaning

This function refers to narration as a process of the interpretation of a critical event, in this case of the disease. As Bruner (1991) pointed out, the specificity of narrative thought is its function of attributing meaning to non-canonical events, that is, events that question the patterns on which the self and the relationship between self and context are based. With respect to the experience of illness, the narrative process can be considered as a reflective effort through which to answer the questions "why me?" and "what does this mean?", and through which to come to terms with identity loss, change and transformation, creating new connections between oneself and the disease (Borden, 1992; Lillrank, 2003; Sherman and Cohen, 2006).

In this sense, narrative has a normalizing function (Williams, 2000), since it allows the integration of the critical event within the system of subjective values and norms that govern one's existence. When people narrate, they tell the story of how their life has been transformed by the disease, and they can interpret the experience of feeling the same person and, at the same time, feeling profoundly different from before the onset of the disease (De Luca Picione, 2021; Zittoun, 2021). Normalization can work in two different and complementary directions: on the one hand, it allows a critical event to be welcomed by existing and functioning regulatory systems; on the other hand, normalization can proceed by rebuilding new regulatory systems following the crisis due to the non-assimilability of the traumatic experience.

Frank (1995) defines illness as a loss of the destination and the map that previously guided the person's life: narration, and in particular the function of the search for meaning, is a process that supports the individual in the construction of new orientation maps.

Emotional expression

This function refers to narration as a regulating device of experience, which connects affective, visceral and bodily processes to symbolic thought processes. Through narration, the affective investment of an experience is symbolized, expressed and connected to events (Tronick, 2010; De Luca Picione and Valsiner, 2017). This function appears particularly relevant with respect to the experience of living with a chronic disease, since it originates from

the visceral processes of the body, which constitute the first and fundamental bond that guides the subsequent elaboration of the disease. Through narration, it is possible to organize the affective experience, giving voice to the body and transforming its language from inarticulate and visceral to symbolized and shareable (Greenberg and Pascual-Leone, 2001; Jowsey, 2016; Kierans and Maynooth, 2001; Rimmon-Kenan, 2002).

The function of the emotional expression of the narrative is, as we have said, a function of connection between body, affection and thought, but it is also a function of emotional catharsis, since it allows the patient to release feelings and anxiety connected to the disease, and a social function, since it allows him/her to share emotions with other people.

Orientation to action

This function refers to narration as an open and dynamic process of the construction, regulation and transformation of agency and of the expression of subjectivity and decision-making (De Luca Picione *et al.*, 2019).

Through narratives, people construct their narrative identity (McAdams, 2008), one of the main characteristics of which is the subjective sense of having direction and objectives in one's life. The narrative function of orientation to action has much to do with the feeling of being able to exercise control over one's goals, and therefore with autonomy and mastery (Adler, 2012). With respect to the experience of illness, this function concerns the recognition of one's role within the processes of the management of the illness.

Aims

In light of the discussion presented, the general objective of this work is to present an innovative, narrative and semiotic qualitative method for the analysis of disease narratives. This method aims to identify the different SMMMs into which the narrative functions can be organized in the subjects' narratives.

First, we will present the procedural steps of our method, and then we will present the different narrative SMMMs which have emerged from a study with young women suffering from BC, monitored during the four phases of the disease (pre-hospitalization, post-operative counselling, chemo/radio therapy and follow-up).

The narrative SMMMs that have emerged from the analysis of these narratives during the first phase of the disease (phase I) will be reported; next, a longitudinal reading path of the SMMMs in two particularly salient and illustrative narratives will be presented.

Our contribution proposes an "integrated" vision aimed at combining a thematic/textual/semantic and manifest level of speech with the foundational/implicit/syntactic and therefore procedural level designed to highlight the subjective way of "semiotically connecting" the field objects.

What distinguishes our proposal is, above all, the type of question we ask of the narrative text, and which we try to convey through the proposal of our method of analysis: namely, how is the process of the construction of sense-meaning-making narratively articulated?

Methodology

Participants and data collection

The research was conducted at a cancer institute within the frame of the STAR Programme, financially supported by UniNA and Compagnia di San Paolo. The research was co-constructed in collaboration with the hospital's psychology service and breast unit surgery and approved by the medical committee of the National Cancer Institute. The hospital's psychology service provided its location and facilities for monitoring the meetings and taking charge of the women who wished to continue with psychotherapeutic support over time.

The women who took part in this research were identified from medical reports and assessed according to the following criteria:

Eligibility criteria: first access to hospital below the age of 50; a diagnosis of infiltrating ductal BC; and voluntary participation.

Exclusion criteria: metastatic disease (stage IV); or psychotherapeutic treatment in progress.

The recruitment was conducted through a one-day meeting in the hospital to explain the progression and aims of the research.

The women were followed up during the first year of medical care at different stages of treatment: pre-hospitalization (T1), post-operative counselling (T2), adjuvant therapy (T3) and follow-up (T4). Thus, each medical phase, constituting a turning point in the medical treatment procedure, reflects a milestone in the meaning of the woman's relationship with BC over time and the psychic challenges (De Luca Picione *et al.*, 2019).

(1) Phase I: facing the unknown. The woman is still undergoing diagnostic investigation of a suspected nodularity.

(2) Phase II: impact of the critical valence of the disease. The woman has learned about the severity of her pathology (receiving a histological examination), has undergone surgery for the malignant nodularity and has agreed the therapeutic path to be taken.

(3) Phase III: relationship with a changed body identity. The woman is faced with post-operative chemotherapy or radiotherapy treatments that affect her relationship with her own body.

(4) Phase IV: construction of a new continuity. The woman returns to the daily routine of life and integrates the maintenance phase, which will last for at least five years. During Phase IV, the woman finds herself recovering spaces of autonomy and gradually reducing her dependence on the medical institution, which she now only attends for follow up.

The women's participation was voluntary; they provided a signed informed consent, and the privacy policy was approved by the hospital. We recruited in the first phase of the research 50 women during the pre-hospitalization phase (Martino *et al.*, 2022a). During the study the group of patients undergoing the four longitudinal phases comprised 10 women, below 50 years of age ($M = 44.4$), We met them: during the pre-hospitalization phase (T1: 40–60 days before surgery); during the post-operative counselling phase (T2: 30–40 days after surgery), which is when the women received the response of the histological examination; during the adjuvant therapy phase (T3: 25–35 days after the start of therapy, differentiated into chemotherapy, radiotherapy and hormone therapy); and during the follow-up phase (T4: first monitoring visit after 8 months) (see Table 1).

Tools

Narrative ad hoc interview. We constructed an original *ad hoc* narrative interview, named the Early Breast Cancer-Processing Trauma Interview (EBC-PTI), to explore the young women's narrative sense-meaning-making processes within the BC experience (De Luca Picione *et al.*, 2018) in every phase of their therapeutic path.

The same narrative interview, proposed to the women during T1, T2, T3 and T4, involved nine open questions, which started from the initial request to narrate the disease experience from the moment it appeared until the time of the interview. Each question was intended as a narrative prompt able to open up a construction of meaning at each stage of the ongoing experience.

The semi-structured interview was constructed to activate different ways of declining the narrative discourse.

Women	All participants (n = 10)
Age	M = 44.4 years
Educational Level	
Primary and Middle School	5
High School	4
Degree	1
Job Position	
Housewife/unemployed	6
Employee	3
Self-employed	1
Marital Status	
Single	1
Married	7
Divorced	2
Number of children Three	1
Two	7
One	2
Children's Age	M = 14.6 years

Table 1. Socio-demographic characteristics of the women

There is an alternation between questions that open up episodic narratives (e.g. *I would like you to choose three words/adjectives/idioms that come to mind when thinking about this phase of the experience. Is there a particular event/episode to which you relate when she says . . . We are interested to know what happened, where you were, who else was with you, what you felt, what you thought at the time*) and semantic narratives (e.g. *People sometimes imagine or have ideas about why they got sick . . . do you have any idea about this or do you imagine anything?*), thus activating the different narrative functions as modes of the functioning of narrative thinking.

The questions are ordered to allow a gradual immersion in the critical experience, opening, in the final parts, a space for dialogue about resources and changes (e.g. *Could you tell me if there is someone or something that you have felt to be particularly helpful? How? Who do you find yourself talking about this with? About our meeting . . . could you tell me if there is one thing in particular that you feel you can draw on from going through this phase?*).

The interviews were conducted in an *ad hoc* room of the hospital. Each had an average duration of approximately 45 min and was recorded and then transcribed verbatim. They were conducted by two women psychologists who are experts in clinical psychology and narrative methodology. The same gender membership has represented a key point in promoting the narration of the women. The researchers were young women, a fact which allowed them to construct an empathetic exchange relationship with the patients.

Method of analysis

Narrative Function Coding System: a qualitative step-by-step procedure

We constructed a theory-driven methodology beginning with the conceptualization of narrative functions as aforementioned. We took a qualitative narrative approach to an innovative, in-depth analysis of the sense-meaning-making processes (Salvatore and Freda, 2011; Salvatore and Valsiner, 2011; Valsiner, 2007). Starting from the analysis of the 50 interviews, different modalities have been identified for each narrative function. Looking at the narrative functions means looking at what narration connects (e.g. the connection between the different temporal dimensions, the connection between critical events and subjective norms of reference), while looking at the modalities of each function means looking

at the way in which this connection is articulated in terms of a greater or lesser complexity, organization, coherence, integration and flexibility. The modalities thus emerge from the relationship between the function and the structure of the narrative, and narratives with different structures will be able to express the same function in a different way. For example, a narrative can articulate time with an emphasis on the dimension of the present or, on the contrary, it can connect the past, present and future in a flexible and organized way, identifying significant connections between these three dimensions. These are two different ways of articulating the sense of one's experience, but they refer to the same narrative function, which is an organization of temporality.

Therefore, it is important to highlight that our analysis does not exclude or neglect the contents of the narrative (i.e. references to themes, events, episodes, people, places); rather, starting from the way in which they are expressed, we are able to trace the processes of the articulation of narrative functions.

In the following paragraphs the method used to identify functions and modalities in the narratives is presented, and the modalities identified, starting from the 50 narratives of the women with BC, are described in detail (see Table 2).

Findings

Articulation of narrative functions in illness narratives. In the following table we show the narrative modalities that emerged from the analysis of all the illness narratives through the NFC method, describing for each narrative function its modalities and the way in which they connect the different levels of the illness experience. For each modality, one or more representative narrative extracts will be reported, taken from the narratives of women with breast cancer.

STEP 1O rganization of the raw textual corpus	Repeatedly read the entire narrative material (in the case of longitudinal texts, following the chronological order of the collection of the material) or the answers provided by the subject to the narrative inputs
STEP 2 Selection of relevant text under analysis	Select and identify the *narrative sense units of analysis*. From a lexical point of view, these can correspond to the entire answer to a question or to a single narrative excerpt, or be present across the board in the same answer. A narrative sense unit of analysis corresponds to the narrative sharing of a pertinent and valuable scene or thought. The question proposed through the interview provides the researcher with the means to observe a narrative functioning. The answers to the interview in fact offer the narrative articulation in different specific modalities. The narrative functions are co-present within the narrative text and therefore the attribution of a portion of text to one or more functions moves through a process of thematic predominance
STEP 3 Relevant text	The narrative sense units of analysis are transcribed in an ad hoc file and organized in their longitudinal evolution
STEP 4 Interpretative process	The interpretative process aims to evaluate the quality and the subjective way of connecting the objects within each unit of text attributed to each specific function. The interpretative level integrates the exploration of the themes and contents proposed by the woman with the observation of the way in which the different signs (with a referential function towards an object) are connected and articulated with each other. At the end of this phase an interpretative label is attributed which identifies the subjective quality of the way of articulating the sense-meaning-making process
STEP 5 Intercoder agreement	Discussion between independent judges
STEP 6 Longitudinal changes	Repeat this procedure for each longitudinal phase of narration collection in order to observe the transformations of the modalities over time

Table 2.
A step-by-step methodology of analysis: the Narrative Function Coding System

The longitudinal changes of sense-meaning making modalities during breast cancer treatment

In this section we will present a longitudinal discussion of the sense-meaning making modalities, following them in the different phases and within the different narrative functions (horizontal reading), which emerged through the use of the method of analysis of narrative functions, in order to observe how they are transformed over the time of the disease experience. The modalities that emerged from the narratives of 50 women in pre-hospitalization (phase I) (Table 3) were analysed longitudinally, following the natural sense-meaning-making flow of 10 women.

In order to make the use of the method of narrative functions more explicit, we have chosen to present a longitudinal narrative path based on sense-meaning making modalities that express a flexible and transformative relationship with the ongoing experience, and one instead based on rigid and crystallized sense-meaning making modalities. Let's think about the possibility of reading and interpreting the modalities emerged within the different functions in their mutual relationship to give the current experience sense-meaning-making that starts from the integration and dialogue between all functions (see Table 4).

This example of a path of sense-meaning making modalities shows how, while the different phases of the disease proceed, the narrative process of meaning's construction performs a gradually more articulated and flexible function of connection with the current experience. Following the process, we note how, in the first phase (time 1), the narrative functions operate through more generic and disorganized modalities: the diagnosis event is temporally placed in continuity with painful events of the past, it is impossible to identify causes or reasons for what happens, the emotional experiences are expressed in a pervasive way and the decision-making capacity appears suspended. These modalities express an emotional experience that is too intense, to which it is not yet possible to give a meaning and with respect to which it is not possible to verbalize feelings except in the primitive state. In the present time the expectation is actualized: the disease was something expected, yet it puts the woman in a condition of absence of decision making and uncertainty about the future. Starting from the second phase (time 2), a gradual process of adaptive connection with experience is observed, the sense-meaning making modalities support a process of integration of the disease within cultural and generic frames of meaning, the temporal perspective focuses on the present, the emotional experiences appear suspended, frozen in a concrete agentive effort, concentrated on the necessary medical actions. The passage towards the following phases (Times 3 and 4) shows transformative processes linked to the possibility of resuming, in the light of the present, the contact between emotion and thought. Furthermore, it appears possible for the woman to interpret her experience in a new perspective, identifying aspects of growth and re-evaluation of what happened, and being able to live with the absence of meaning linked to the onset of disease (see Table 5).

This second example of a path of sense-meaning making modalities shows a narrative process which, through the different phases of the disease, remains rigid and static, failing to grasp (and promote) the transformative movements of the experience. Following the process, we note how initially (phases 1 and 2) the narrative functions represent the disease as an all-embracing aspect of one's experience, with which it is not possible to emotionally connect. The meaning is attributed in a generic way, linked to common sense theories or external aspects that have little to do with personal history, just as the emotions associated with the disease are generic, vague but cumbersome. This difficulty in giving word to feeling with respect to illness is associated with an absence of agency, that is, a difficulty in recognizing oneself capable of making decisions, acting and planning. Time also appears immobile, unable to flow: it is first frozen in a medicalized present, marked by continuous medical checks (phase 1), and then felt as violently blocked, interrupted by the presence of the disease. Probably, the emphasis on concrete and external aspects during the first phases, despite

Function	Modes	Description
Organization of Temporality	Relived	This modality is present in the narratives in which the temporal framework connects the time of the current experience with a time in the past in which the disease has already been experienced at an individual or family level. Through the narration, a continuity with the past is achieved, so that the present of the disease is configured as a time already expected and/or as a time that returns *"I already come from grandparents, uncles, relatives, both from the side of mom and dad . . . here he is."*
	Chronological	This modality is present in narratives in which the temporal framework is focused on the dimension of the present. In particular, narration articulates the present in its chronological dimension: these are narratives in which precise chronological references are frequent and in which the disease experience is "emplotted" exclusively through the sequencing of medical events and practices connected to the cancer. The connection between the present and the past and/or the future is missing *"In early July, in mid-July, they had already operated on me . . . then, I started the therapies, then chemo, then radio."*
	Suspended	This modality is present in narratives in which the temporal framework appears suspended in a confused present, characterized by the expectation of understanding the severity and evolution of the disease. Narration seems to fail in identifying links not only between the different temporal dimensions (there are no links between past, present and future), but also within the same temporal dimension (the present is not even chronologically marked, there is no sequencing of events, only a confused and suspended time appears, without references and coordinates) *"I struggle I do not remember well. I wait . . . I live in a confused way. The problem is that you always have to wait."*
	Interrupted	This modality is present in narratives in which the temporal framework articulates the rupture and fragmentation of the biographical flow following the onset of the disease. Illness is the critical event around which one's experience is temporally organized and the two planes of time, past and present, are organized around aspects of discontinuity of the self and of one's history, divided at first and after the onset of illness. The time of one's existence appears, in fact, interrupted by the disease, and the narration articulates this interruption without being able (yet) to reconfigure it by identifying aspects of continuity "*Since I learned about it, my life has stopped . . .. I only think about the word chemotherapy"*
	Reconstructive	This modality is present in narratives in which the temporal framework connects the experience of the disease and the changes it introduces. In the past tense. Through this modality, although the disease is identified as a critical event and changes and transformations are recognized, the temporal dimension is not interrupted since links are built that organize a history of self into which the experience of disease is integrated and, sometimes, it is connected to future projects *"Before I was super energetic, I did many things . . . now I feel down; maybe it's the drugs too."* *"The period does not help, the heat, I already do not love the heat it throws me down together with the therapies . . . then it's August we go on vacation, so many things put together, not being able to take the girls to the sea because every week I have to stay there (in hospital) even in August, one is 9 years old and the other 14 and a half years old. The 14-year-old goes to sea with friends and (I have arranged) that she will go to sea for a week with a friend of mine"*
	Rejected	This modality is present in narratives in which the temporal framework is focused on the time just elapsed of the disease, which is rejected and/or not recognized. Narration articulates the disease as a rejected event of one's experience, an object impossible to integrate and placed in a time that cannot be crossed again and to which it is not possible to return with thought *" I do not want to talk about it . . . nothing happened, I do not want to say anything."*

(*continued*)

Table 3.
Functions, modes and their description

Function	Modes	Description
Search for Meaning	Internalized	This modality is present in narratives through which the meaning of the illness is searched within oneself. Narration articulates a process of reflection that connects the disease to one's responsibility and in general to aspects of oneself, such as ways of functioning which are recognized, more or less explicitly, as part of the causes that led to the onset of the disease *"Maybe a little . . . I do not know, maybe it's that I always looked beyond . . .. always turned toward others and not toward myself."*
	Generalized	This modality is present in narratives through which the search for meaning is anchored to cultural references and shared social representations of disease, so that the constructed meaning appears generic, taken for granted and not connected to subjectivity and personal history. Narration thus articulates a process whereby the world appears attributable to stable mechanisms that govern it (e.g. life-death cycle), and illness is represented as something that is part of life and is connected to the whole, without specific causes and reasons *" I do not think there is a particular reason why a person gets sick; it happens, it happens. . . that's enough"*
	Non sense	This modality is present in narratives that seem to fail in the process of searching for the meaning of disease. Narration puts into words the impossibility of finding meaning for what has happened/is happening, and of identifying causes or reasons that may explain the onset of the disease. Illness is described as an "isolated" element, which cannot be connected to anything - of the internal or external world, specific or generalized - that makes it understandable/explainable *"I am not giving any explanation."* *"It is not anyone's fault."*
	Externalized	This modality is present in narratives in which the meaning of illness is searched outside of oneself. Narration articulates a process through which the cause of the onset of the disease - and the guilt that may result from it - is not attributed to oneself, but to external elements: fate, God, the environment or in any case uncontrollable external factors *" We have to take it with the Lord, the will of the Lord . . . whatever God wants."*
Emotional expression	Pervasive	This modality is present in narratives through which the emotions connected to the disease are put into words in the raw and primitive state. In this modality the use of metaphors is frequent, which highlight how the experience of the disease is affectively totalizing, invasive, and pervasive *" It's very disgusting, doctor . . . this thing is too disgusting; I miss the air* *I see everything black; I am still distressed by this thing, I live in this thing! It's not that I can distract myself, yes I get distracted but in the end we always talk about the same thing; I do not cook anymore* *I do not play with my grandchildren . . . this disease has invaded everything."*
	Disconnected	This modality is present in narratives through which the process of connection between the disease and the emotions it arouses seems to fail. Narration represents illness as disconnected from the affective plane, which appears confused and impossible to put into words. Through narration, however, it is possible for the woman to give word to her difficulty in recognizing and describing the way she feels *"I have no words."* *"I do not know; I do not know how to describe it, a very specific adjective . . . nothing."*
	Connected	This modality is present in narratives through which it is possible to recognize and express the emotions connected to the disease, and also to reflect on them, identifying their connection with specific situations, events or moments. Generally, in narratives that express this modality, emotions are described together with "coordinates" that contextualize them, as in the following example *" Now I am realizing, I feel lucky. I am fine with this disease, unfortunately, there is someone who is not."*
	Sensorialized	This modality is present in narratives through which feelings are described starting from sensory experience. The affects are put into word, in their visceral and bodily dimension, often concerning painful or annoying physical sensations. If we understand the narration, and in particular its function of emotional expression, as a process of connection between body-feeling-thought, the sensorialized modality can be found in those narratives in which feeling is more linked to the body than to thought *"(ah) Tiredness, vomiting, nausea, eh . . . pains; they made me have side effects you have to unblock your hand because your fingers are blocked."*

Table 3. (*continued*)

Function	Modes	Description
Orientation to action	Uncertain	This modality is present in narratives through which agency is represented as uncertain, especially with respect to the future. It is not possible to recognize oneself as an active decision-maker nor to transform thought into action: narration puts into words a form of agency subordinated to "seeing what will happen" *"I can talk about it now, but then, we have to see if I have the strength to do it"* *"It depends on what will be"*
	Dependent	This modality is present in narratives through which agency is felt as blocked, and therefore is delegated to someone else. Narration puts into words the aspects of the illness experience that refer to a dimension of helplessness, mistrust, desperation and resignation, for which it is not possible to recognize oneself as active agents and decision-makers. The only possible alternative is a resigned dependence on the medical context, to which the capacity for action is delegated *"These days make me feel discouraged; it is poignant. I need to trust, here I feel protected, in the structure, in my city, I have to rely."*
	Combative	This modality is present in narratives through which the ability to manage the disease in a combative way is affirmed. Narration puts into word the assumption of decision-making with respect to the actions necessary to cope with the disease: women recognize themselves as capable of exercising a grip on disease and on its challenges *"You have to fight; you have to keep going. I get up in the morning and say I have to move on. You just have to face things; you cannot afford to break down."* *"The only thing that is needed is strength; if you are not strong, you do not go forward. I have to be resolute because taking pills every night for 5 years is so annoying."*
	Revaluing	This modality is present in narratives through which the current time of illness is connected with the past time. Furthermore, in the light of the present, potentialities and future transformations are imagined, or choices already introduced are re-meaning: for women it seems possible to experiment with new choices and new ways of relating to life by experimenting with new agentive modalities *"There are so many useless actions that make you lose energy now. I focus on the essential things"*

Table 3.

Narrative functions	Organizzazione del tempo	Search for meaning	Emotional expression	Orientation to action
Sense-Meaning Making Modalities				
Time 1	Relieved	Non sense	Pervasive	Uncertain
Time 2	Chronological	Generalized	Disconnected	Combative
Time 3	Chronological	Externalized	Sensorialized	Combative
Time 4	Chronological	Non sense	Connected	Revaluing

Table 4. Flexible and transformative sense-meaning making modalities over time

Funzioni narrative	Organizzazione del tempo	Search for meaning	Emotional expression	Orientation to action
Sense-Meaning Making Modalities				
Time 1	Chronological	Generalized	Pervasive	Uncertain
Time 2	Interrupted	Externalized	Pervasive	Uncertain
Time 3	Reconstructive	Externalized	Sensorialized	Combative
Time 4	Blocked	Non sense	Pervasive	Combative

Table 5. Rigid and crystallized sense-meaning making modalities over time

preventing the full integration of the disease into one's personal history, can still be protective against the risk of non-sense.

Even in the final stages (3 and 4) the narrative process does not promote understanding of the affective experience: emotions remain overwhelming and the temporal framework

appears immobile, unable to flow. In the last phase, although it seems impossible to identify a meaning for the disease, even generic and/or external, it is however possible to fight: perhaps the psychic resources shift to "doing", where the integration of the emotional aspects is still too difficult.

Conclusions and implications

The method of analysis of illness narratives presented in this study with young women with breast cancer allows us to highlight some aspects that seem promising both for the consolidation of the method as a device for analysing the narrative process of sense-meaning making both for its use for clinical and preventive purposes.

The method of narrative functions appears to be able to capture the complexity of the narrative process of construction of illness' meaning, identifying both representative modalities of good functioning, which express a gradual process of connection with the variability of the experience, and modalities that express moments of disorganization and rigidity, which can persist throughout the time of treatment.

We believe that this method, which focuses on the "form" and "way" of narratively constructing the subjective experience, rather than on the specific thematic content, can be used with all types of illness narratives (e.g. clinical interviews, in-depth narrative interviews, narratives writings, diaries), single or repeated over time. In fact, it is able to grasp the diachronic transformation of the modalities during the different phases of the collection, and therefore plays a role in monitoring the process of clinical change introduced by any proposed ad hoc psychological interventions.

We also hypothesize that the in-depth narrative interview proposed in the present work can be used as a qualitative device for assessing the narrative-psychic functions of the mind. It allows, in the first phase, to put the experience into words, and in the following phases to profile the evolutionary path of adaptation of the woman to the experience of illness. This profiling will make it possible to highlight the narrative functions that could encounter phases of greater fragility and/or progressive stiffening and that could be the subject of clinical psychological interventions or accompaniment interventions aims at health promotion. For example, from the studies conducted (Martino *et al.*, 2022c) it is possible to observe how emotional pervasiveness in the first phase, if not adequately contained and supported, could evolve towards a progressive stiffening during the subsequent phases of the disease.

The narrative-psychic function of the mind, which has transiently gone into crisis, can become the trajectory of settings and discursive channels of therapeutic interventions or psychological support. It is on this trajectory that a relationship with the ill person can be based, aimed at active coping and adaptation to experience. We are thinking of personalized narrative support interventions always connected to the specificity of the experience phase and to the specific narrative-psychic function that went into crisis. Always keeping the focus on the specific phase that the woman is going through, will allow us to be aware of the subjective psychic task that the woman is facing at that moment and also of what, from a clinical point of view, must be respected as an aspect of protection from the risk of psychic collapse.

In the future we intend to implement studies that confirm the effectiveness of the narrative functions method both through studies in different areas of the disease and by implementing it with different narrative formats.

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