Psychological Change in Everyday Life: An Exploratory Study

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The innovative moments model was used in a pilot study that aimed to explore the change processes involved in everyday change outside psychotherapy. According to this model, the emergence and development of innovative moments (IMs) as exceptions to a problematic pattern are closely associated with psychological change. A longitudinal design covering 4 months of interviews was implemented with 13 adults who were coping with significant personal problems without clinical psychopathological complaints. Semistructured interviews were used to explore participants' personal accounts of their problems, and change was assessed using a scaling task at the end of the study. A total of 114 interviews were analyzed using the innovative moments coding system. A general linear model showed that higher levels of change were associated with higher proportions of complex IMs over time. Moreover, lower levels of change were associated with an increase in elementary IMs. These results support the idea that successful psychological change in everyday life shares similarities with the change pattern found in psychotherapy using the innovative moments model.

The way people change in their everyday lives, without professional help from a psychotherapist or a counselor, can be informative of human change processes in general and can also shed light on what occurs in psychotherapy. This study aims to explore how participants change as they cope with difficult life events without professional support, using their natural resources to promote change. Along these lines, several studies on positive change following traumatic stressful life events (Helgeson, Reynolds, & Tomich, 2006; Linley & Josephs, 2004, 2011; Park, 2010) or daily stressors (Abraham & Stein, 2015; Gianakis & Carey, 2011; Higginson & Mansell, 2008; Losavio et al., 2011) aimed "to increase our understanding of naturally occurring

change including the facilitators of this change" (Gianakis & Carey, 2011, p. 442), and suggested that understanding everyday natural functioning can highlight how psychological change is facilitated by psychotherapy (Marken & Carey, 2015).

Research on posttraumatic growth (Linley & Joseph, 2004, 2011; Park, 2010) and stress-related growth (Helgeson et al., 2006; Losavio et al., 2011) has suggested that traumatic or even stressful events from the daily routine challenge people's underlying assumptions about themselves and the world, compelling them to search for new meanings. Moreover, this achievement of new meanings is associated with positive change following difficult life events (Helgeson et al., 2006). Linley and Joseph (2011), for example, completed a study that aimed to assess whether there were differences among people's process of searching for new meanings, their achievement of new meanings following adverse life events, and the association of this achievement with positive and negative changes as result of these experiences. They found that achievement of new meanings was associated with increased positive changes, whereas the process of searching for new meanings was not associated with positive changes by itself. On the contrary, searching for meaning by itself was related to higher levels of negative change. For positive change to occur, it is necessary that a person engage in cognitive processing that will allow new meanings to be achieved and consolidated.

Change in people who had naturally recovered from different types of difficult life events, without psychotherapeutic help, have also been studied by Higginson and Mansell (2008) and Gianakis and Carey (2011). The overall result of both studies highlighted three common themes in the participants' self-reports about their change process. First, participants were aware of change as moving toward a new sense of identity or restoring a previous positive functional state, and they perceived their old and the new selves after recovery, which resulted in seeing themselves as changed people. Second, change was often perceived as a gradual and continuous process, although it could also be observed as the result of sudden insight. Finally, change was described as a result of reflexive processes characterized by increased insight and meaning reorganization specifically related to critical experiences associated with strong emotional arousal (Gianakis & Carey, 2011; Higginson & Mansell, 2008). Friedlander, Lee, and Bernardi (2013) analyzed pivotal life experiences with a positive value in life, and found that the event that precipitated the difficulty was a negative one or a challenging transition that led to a process of self-transformation. Moreover, they observed that the process of transforming these challenging or problematic life conditions into valuable experiences was associated with participants' personal accounts and was similar to processes found in successful psychotherapy.

These studies on psychological change following difficult or even traumatic life events have provided valuable insights about the processes of human change amid struggle with difficult life experiences. Nevertheless, to the best of our knowledge, all empirical studies have relied mostly on a retrospective design to assess psychological change processes via the recollection of and reflection on previous life events. As such, these studies have not observed psychological change as it unfolds, as people struggle with daily challenging events, which is one of the aims of the present study.

Recently, Gonçalves and colleagues (Gonçalves, Ribeiro, Mendes, Matos, & Santos, 2011; Gonçalves, Ribeiro, Mendes, et al., 2016) developed a coding system that tracks innovative moments (IMs) in psychotherapy to capture how change unfolds throughout treatment. IMs are defined as exceptions to a problematic pattern of meaning that motivate a client to seek therapy. This theoretical framework assumes that in psychopathology, the client's meaning-making system is

frozen in a redundant pattern, which leads her or him to act, think, feel, and relate with others in repetitive ways that do not allow the problems to be solved. When IMs start to emerge, the repetitive pattern is challenged and new meanings emerge (in the form of actions, thoughts, new pattern of relationship, and so on). Thus, IMs are new ways of acting, feeling, and thinking—ways that are alternative to the problematic pattern of meaning. This method of analysis of psychotherapy change has been applied to a wide diversity of problems (e.g., depression, prolonged grief, wife abuse) and therapeutic models, such as narrative therapy (Gonçalves, Ribeiro, Silva, Mendes, & Sousa, 2016; Matos, Santos, Gonçalves, & Martins, 2009), emotion-focused therapy (Mendes et al., 2010), client-centered therapy (Gonçalves et al., 2012), constructivist therapy (Alves et al., 2014), and cognitive-behavior therapy (Gonçalves et al., 2015). Recently, Piazza-Bonin, Neimeyer, Alves, Smigelsky, and Crunk (2016) also compared the therapies of prominent client-centered, constructivist, and existential humanistic therapists using the innovative moments coding system (Gonçalves, Silva et al., 2011), finding a convergent support from a different team of the ability of the IMCS to depict the therapeutic process. From these studies, several systematic findings emerged: (a) IMs occur more in recovered than in unchanged cases; (b) IMs emerge in five different types—three elementary types (action, reflection, protest) and two complex types (reconceptualization and performing change; see Table 2 for more details); (c) elementary IMs are typical in the first and middle phases of therapy, whereas complex ones are typical of middle and late phases; and (d) complex IMs almost do not emerge in unimproved cases. In sum, the innovative moments model of change suggests that elementary IMs are the most basic indicators of psychological change and are identified by the presence of new thoughts, feelings, and behaviors that are distinct from the initial problematic pattern of meaning. Reconceptualization IMs tend to emerge in recovered clients from intermediate sessions onward and to increase and evolve until therapy ceases. These IMs have two primary features that promote and sustain change: a contrast between the initial problematic pattern of meaning and the new one, and the awareness of how this transformation between the former and the new meaning pattern emerged (Gonçalves & Ribeiro, 2012). Moreover, reconceptualization IMs involve an agentic position of the self, because the contrast was produced by something the person did (or thought or felt). Finally, following the emergence of reconceptualization IMs, performing change IMs (i.e., actions that show commitment to new life projects) allow the client to project the changes into the future (Cunha et al., 2012, Gonçalves et al., 2014; Gonçalves & Ribeiro, 2012).

The innovative moments perspective on psychological change offers an empirical model of change in psychotherapy and a methodological procedure that allows the assessment of change as it emerges over time (Gonçalves et al., 2012). The model, therefore, may also be helpful to explore changes in everyday life. In the present study, our primary goal was to conduct an exploratory study on natural change processes using the IM model to analyze change. Moreover, trying to avoid a central limitation of former studies (Gianakis & Carey, 2011; Higginson & Mansell, 2008; Linley & Joseph, 2011) on daily life change (their retrospective design), we developed a 4-month longitudinal design.

Two main research questions organize the present study: (a) Do participants produce IMs in everyday life-change processes? (b) Are the patterns of change similar to or different from those that occur in psychotherapy? That is, do participants who change more produce more complex IMs? We hypothesize that participants who change more have a higher presence of IMs, particularly complex IMs (reconceptualization and performing change IMs). We have no expectation regarding elementary IMs (action, reflection, and protest IMs).

METHOD

Participants

The participants were Portuguese volunteers recruited after we publicized the study via e-mail, posters, and a public announcement at two university campuses and their surrounding communities. The study was promoted as a research project investigating personal change. The selection criteria for the study included participants who (a) were at least 18 years old, (b) were not attending psychotherapy services, (c) were able to identify and disclose a significant life problem, (d) were able to participate in a 4-month longitudinal study, and (e) did not present significant psychopathological symptoms at the beginning of the study, as measured by the general symptom index of the Brief Symptom Inventory (BSI; see details in the Measures section).

A total of 33 participants were initially involved in this study; however, 10 participants were excluded because they were unable to fulfill one or more of the inclusion criteria. All participants provided their written, signed consent, and no compensation was offered for their adherence to the longitudinal design. Participants who presented clinically significant emotional disturbance at the time of the first interview were referred to community psychological services. Among the 23 participants selected, 10 dropped out during the study. Participants' justified their dropout by citing unexpected changes in their daily routines (e.g., professional, family, academic difficulties) that interfered with their availability to schedule the following interviews, and the majority dropped out between the second and third interviews. The fact there was no financial compensation for the attendance to the 4-months longitudinal design may have demotivated some of these participants.

Overall, 13 participants completed the study, 6 men and 7 women aged 20 to 54 years old ($M = 31.54$), all Caucasian. In terms of marital status, 8 were single, 2 were married, and 3 were divorced. Regarding their academic qualifications, 1 had a secondary education, 6 were working toward a university degree, 5 were university graduates, and 1 had a master's degree. None of the participants sought professional help during the study. Table 1 displays a brief characterization of the types of problems presented by each participant as well as the number of interviews completed during the 4-month study.

Measures

The BSI (Derogatis, 1982; Portuguese version by Canavarro, 1999) is a short version of the Symptom Checklist (SCL-90-R; Derogatis, 1977) and was used for assessing psychopathological symptoms, only for sampling purposes. The BSI is a 53-item questionnaire that assess nine dimensions of psychopathological symptoms—somatization, interpersonal sensitivity, obsessions and compulsions, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism—and three global indexes—that is, the general symptom index (GSI), which reveals the overall level of psychopathological symptoms. The Portuguese adaptation by Canavarro (1999) showed overall high reliabilities, with Cronbach's α falling between .7 and .8; an exception was phobic anxiety and psychoticism scales, with Cronbach's α slightly lower than .7. In this study, we specifically used the GSI from the general population ($M = .835$, $SD = .48$) to establish a cut off of 1.32 (i.e., $M + 1\ SD$), which allowed identifying participants with clinically significant symptoms.

TABLE 1
Participants' Types of Problems and Number of Interviews Completed

Participant	Number of interviews	Types of problems
P1	8	Difficulties in time management and overworking, social withdrawal, and difficulties addressing negative feelings and thoughts regarding a recently ended intimate relationship.
P2	8	Difficulties in managing daily routines and tasks, discouragement toward academic assignments, and a lack of academic performance.
P3	9	Difficulties in achieving a vocational/professional definition, which results in dissatisfaction, and an inability to adapt to the workplace and the current professional task; undecided regarding an eventual choice for a self-sustaining lifestyle in direct contact with nature.
P4	8	Difficulties in planning and managing daily routines concerning the writing and conclusion of a master's dissertation, and social withdrawal.
P5	10	Difficulties in readapting to her hometown after 1.5 years of emigrating to another country, unemployment and financial dependence on parents, and professional dissatisfaction.
P6	10	Difficulties in social interaction and integration after one year of sexual orientation definition; fear of rejection by the peer group, teachers, friends, and family, and social discrimination in general.
P7	8	Difficulties in managing time, daily routine, and professional overwork; difficulties in coordinating professional tasks with the status of a working student.
P8	9	Emotional difficulties after a contentious divorce experience, social withdrawal, and feelings of loneliness.
P9	8	Difficulties in managing time, daily routine, and sleep; low resistance to frustration and irritability; difficulties with social interaction.
P10	10	Difficulties in public speaking and social exposure, lack of assertiveness when faced with social conflicts, lack of academic performance, and family and marital problems.
P11	9	Difficulties in constructing intimate relationships of trust after two contentious divorces, social isolation, and sadness.
P12	9	Relationship difficulties with ex-husband after a contentious divorce; difficulties with accessing and interacting with her children, whose custody was given to the ex-husband; and management constraints on the execution of her master's thesis.
P13	8	Difficulties in public speaking and social exposure, a lack of academic performance, and social anxiety.

An adaptation of de Shazer's scaling task (1991) was used to evaluate the change from participants' perspective, completed in the last interview. The participants were asked to rate the dominance of the initial problems in their life using a 10-point scale, in which 1 signifies total dysfunction and 10 signifies optimal functioning. The two ratings were requested at the final interview, one for the initial (retrospectively) and one for the last interview.

A semistructured interview was used to collect the data. Three protocols of semistructured interviews were constructed: one for the first interview, a second for the intermediate follow-up interviews, and a third for the last interview.

TABLE 2
Innovative Moments Definition and Clinical Vignettes

	Contents	Examples (Problematic pattern of meaning: depression)
Action	• New coping behaviors while facing anticipated or existing obstacles • Effective resolution of unsolved problems • Active exploration of solutions • Restoring autonomy and self-control • Searching for information regarding problems	C: Yesterday, I went to the cinema for the first time in months!
Reflection	Creating distance from problems • Comprehension: Reconsidering the causes of problems and awareness of their effects • New problem formulation • Adaptive self-instruction and self-thought • Intention to fight problems' demands and references to self-worth and feelings of well-being	C: I realize that what I was doing was humanly impossible. I was pushing myself, and I never allowed myself any free time … it's more natural and healthier to let go some of these extra activities.
	Centered on change • Therapeutic process: Reflecting on the therapeutic process • Change process: Considering the process and strategies implemented to overcome problems and references of self-worth and feelings of well-being as consequences of change • New positions: References to emergent identity versions induced by problems	C: I believe that our talks and sessions have proven to be fruitful. I felt like going back to old times; it was good. I felt good. I felt it was worth it.
Protest	Criticizing problems • Repositioning oneself toward problems • Emergence of new positions • Positions of assertiveness and empowerment	C: What am I becoming, after all? Is this where I'm headed? Am I going to stagnate here? C: I'm an adult, and I'm responsible for my life, and I want to acknowledge these feelings, and I'm going to let them out. I want to experience life. I want to grow, and it feels good to be in charge of my life.
Reconceptualization	Reconceptualization IMs always involve two dimensions: • Description of the shift between two positions (i.e., past and present) • The process underlying the transformation	C: You know … when I was there at the museum, I thought to myself, "You really are different." … A year ago, you wouldn't be able to go to the supermarket. Ever since I started going out, I started feeling less depressed. … It is also related to our conversations and changing jobs. T: How did you get this idea of going to the museum? C: I called my dad and told him that we're going out today. T: This is new, isn't it? C: Yes, it's like I tell you: I sense that I'm different.

(Continued on next page)

TABLE 2
(continued)

	Contents	Examples (Problematic pattern of meaning: depression)
Performing Change	• Generalization into the future and other life dimensions of good outcomes • Problematic experience as a resource in new situations • Investment in new projects as a result of the process of change • Investment in new relationships as a result of the process of change • Performance of change: new skills • Reemergence of neglected or forgotten self-versions	T: You seem to have so many projects for the future now. C: Yes, you're right. I want to do all of the things that were impossible for me to do while I was dominated by depression. I want to work again and to have time to enjoy my life with my children. I want to have friends again. The loss of all of the friendships in the past is something that still hurts me deeply. I want to have friends again, have people to talk to, share experiences, and feel engaged in my life again.

Note: Adapted with permission from Gonçalves and colleagues (2011).

The first interview involved communicating to participants information regarding the study's general objectives (i.e., to study how people address daily difficulties) and procedures. The interviewer proceeded with open-ended questions to explore the narratives about the problematic experiences, specifically the subject or theme of the problem, contexts, characters, episodic examples, actions, thoughts and feelings, impact on everyday life domains, and description of efforts made to solve the problem.

The intermediate follow-up interviews focused on how the problem's impact had changed since the previous interview. The questions aimed to collect the most complete narratives relative to the problem since the last encounter, including the subject or theme, contexts, characters, episodic examples, actions, thoughts and feelings on everyday life domains, and description of the efforts made to solve the problem.

The last interview, in addition to the topics of the intermediate interviews, also involved questions on the evaluation of the entire set of interviews, asking for a revision of what had occurred during this period from the participants' perspectives. Moreover, in the interview, questions were asked concerning participants' future plans for handling their former and present difficulties. This interview protocol was similar to the one employed by Gianakis and Carey (2011) and Higginson and Mansell (2008).

The innovative moments coding system (IMCS; Gonçalves et al., 2011) is a qualitative procedure used for tracking the proportion of five types of IMs: action, reflection, protest, reconceptualization, and performing change (Table 2). The proportion is calculated per interview, which corresponds to the amount of time each participant spends elaborating on each IM type. The sum of the five types of IMs allows having a global measure of IMs. The sum of the proportion of action, reflection, and protest IMs allows the calculation of elementary IMs, whereas the sum of the proportion of reconceptualization and performing change allows the calculation of complex IMs. The reliability of the IMCS has been demonstrated in previous studies, with Cohen's kappa ranging from .86 to .97 (Alves et al., 2014; Gonçalves et al., 2011; Mendes et al., 2010), which indicates a strong, reliable agreement between coders (> .75) (Hill & Lambert, 2004; Hill et al., 2005). The reliability for this study is displayed in the Procedures section.

PROCEDURES

Data Collection

The three semistructured interviews were conducted at both campuses where the study was announced, at participants' home or workplace, or at a community center, always in a private, quiet setting. The interviews were conducted at 2- to 3-week intervals over 4 months and were performed by one interviewer (first author), who was a female doctoral student with 6 years of training in clinical psychology and cognitive behavioral psychotherapy. During all interviews, the interviewer assumed a nontherapeutic position while asking open-ended questions regarding the status of the problematic situation identified by the participant in the initial meeting. The interviewer did not intentionally interfere with participants' spontaneous efforts to solve their problems (e.g., by making suggestions or giving advice); she only collected the most comprehensive account of how they were living with the initial difficulty to which they referred. For that purpose, open questions were asked regarding the degree of impact of the problem in participants' life at the first interview, or since the last interview at the intermediate and final interviews, trying to follow the same questioning sequence: How does the problem affect your life? How did the problem affected your life since our last encounter? Could you describe some episodes in the last weeks/since our last encounter when the problem was present? How did you feel at those moments? What did you think? How did you react? Since then, have you tried some efforts to solve the problem? What kind of outcomes have you achieved from those efforts?

The interviewer did not go further in elaborating each topic, trying to keep the interviews at a descriptive level even when participants displayed fewer or any changes in their problem resolution. The use of a semistructured interview (as described in the Measures section), as well as the not-intervening role of the interviewer, was used to minimize the possibility of bias created from the interview procedure. Each of the interviews lasted approximately 30 to 60 minutes and was audio recorded. The BSI was administered at the end of the first interview, and the scaling task was applied at the last interview. We did not use the BSI at the last interview because the participants recruited had a low score in the BSI, which led to their nonclinical status.

Data Analysis

In this study, a total of 114 interviews, with 13 participants, were coded using the IMCS. For reliability assessment, Coder 1 (first author) coded 100% of the sample (114 interviews), and Coder 2 independently coded 31.6% of the sample (36 interviews), corresponding to the interviews with 4 participants (P3, P6, P9, P11). Coder 2 was unaware of the outcomes in terms of the change in these four participants at the end of the study. Both coders were previously trained in the coding procedures and directly supervised by its original authors.

Coding IMs involved three steps: (a) the coders' consensual definition of the problems shared by the participants; (b) the identification of IMs directly from the audiotaped interviews, computing the time (seconds) spent on each one; and (c) the categorization of each IM by type.

1. **Consensual definition of the participants' problems**: For each participant, a consensual list of problems was presented at the beginning of the coding process by each coder,

taking into account the problems shared by each participant. Each coder first prepared an independent list of problems, and subsequently the two lists were discussed by both coders until a consensual final list of problems was achieved. This list oriented the identification and categorization of IMs throughout the interviews as exceptions to the listed problems.

2. **Identification of IMs throughout the audio recordings**: After the consensual definition of each participant's list of problems was established, all interviews were coded independently for the presence of IMs by each coder following its sequential order. Each IM's onset and offset were identified and computed in seconds directly from the audio recordings.

3. **IMs' categorization in terms of type and proportion**: After the IMs were identified, they were independently classified into types by both coders. In this study, we have two measures of IMs: the proportion of elementary IMs (action, reflection, and protest), and the proportion of complex IMs (reconceptualization and performing change IMs).

In terms of reliability calculation, the percentage of agreement between the two coders regarding the overall proportion of IMs was computed as the number of overlapping seconds identified by both coders as corresponding to IMs; then, they were divided by the total amount of time of the interview. To assess the agreement between coders regarding the five types of IMs, Cohen's kappa was computed (see additional details regarding the IMCS in Gonçalves et al., 2011). The degree of agreement between the two coders on the overall IMs proportion was 97.64%, which means that approximately 98% of the proportion of IMs identified was common for the two coders, independent of type. The reliability of the type of IMs was .92, as assessed by Cohen's kappa. These values represented a very good agreement between coders. After this phase of the reliability assessment of the IMCS, Coder 1 completed the coding of the remaining interviews with the IMCS.

RESULTS

Evolution of IMs in the 4-Month Period

To study the evolution of IMs in the 4-month period, we used a general linear model (GLM), which allowed us to compare the evolution of IMs according to participants' change. Thus, the GLM analysis was computed with the proportion of IMs (elementary and complex IMs) as the response variable and time in the study, change (scaling task), and the interaction between time and change as explanatory variables. This type of analysis allowed us to identify change patterns over time (Agresti, 2002).

In this analysis, the probability of "nonoccurrence of an IM" or the "occurrence of a certain type of IM" was illustrated as a binary response variable 0/1. This probability was treated as a random variable with a Bernoulli distribution, and the primary goal was to infer the probability parameter associated with this distribution. A generalized linear mixed effects model (Agresti, 2002) was used, integrating a subject-specific random effect to consider the variability among participants. A correlation between measurements from the same participant was expected. Thus, we estimated the following:

TABLE 3
Participants' Levels of Change According to the Scaling Task at the First and Last Interview

Participant	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
First interview	3	2	4	3	3	3	3	4	3	1	2	4	4
Last interview	8	8	8	8	10	8	8	7	3	5	3	5	6

$$P \text{ (occurrence of an IM of a certain type–explanatory variables)} = \mu,$$

where the explanatory variables have a linear effect on the probability through a link function so that

$$\mu = (\exp(\eta)) / (1 + \exp(\eta)),$$

where η is the logarithm of the odds ratio between the occurrence and the nonoccurrence of an IM. More specifically,

$$\eta = \log(\mu / (1 - \mu)).$$

The explanatory variables were considered as

$$\eta = \beta \times X,$$

where vector X represents all of the significant explanatory variables, and β corresponds to the vector of the parameters to be estimated.

More specifically,

$$\eta = \beta 0 + \beta 1 \times \text{interview} + \beta 2 \times C + \beta 3 \times \text{interview} \times C,$$

where $\beta 1 \times$ interview is the effect of time (evolution from the first interview to the last interview), $\beta 2 \times$ C is the level of change (i.e., the difference between the evaluation of the difficulties at the first interview and the last interview), and $\beta 3 \times$ interview $\times$ C corresponds to the interaction between time and change.

The evaluation of the levels of change in participants had a mean of 3 points ($SD = .91$) in the first interview and a mean of 6.69 points ($SD = 2.14$) in the last interview. Table 3 shows the results regarding the levels of change in participants in the first and last interviews. This means that, on average, participants evaluated the difficulties at the beginning as worse than those at the end of the study.

The results showed that the parameter change had no significant effect on the probability of the emergence of elementary IMs ($p = .924$). The results regarding the parameter time showed significant positive effects on the probability of occurrence of elementary IMs ($p = .006$). This parameter explained only 3.50% ($R^2 = .035$) of the variance in elementary IMs over time. The results regarding the parameter interaction between time and change showed a significant positive
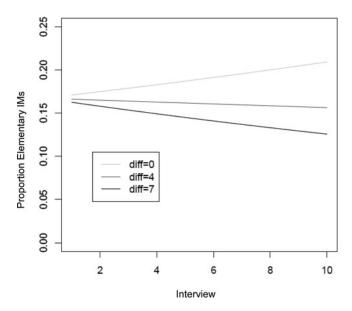
FIGURE 1 Proportion of elementary IMs. The different gradient lines represent the evolution of the elementary IMs probabilities between two participants with extreme differences in levels of change [P9 (diff = 0), P5 (diff = 7)], and two participants with intermediate levels of change [P3 and P10 (diff = 4)].

effect on the probability of occurrence of elementary IMs ($p < .0001$). Again, the variance explained was low ($R^2 = .039$). The results also showed that the participants exhibited no significant differences ($p = .39$) in the proportion of elementary IMs at the beginning of the study.

Figure 1 shows the evolution of the likelihood of elementary IMs over time. The different gradient lines represent the evolution of elementary IMs probabilities. To illustrate the evolution, we selected two extreme cases [P9 (diff = 0), P5 (diff = 7)] and two intermediate cases [P3 and P10 (diff = 4)] on the scaling task (i.e., P9 had no change, whereas P5 had the highest change—7 points). All other participants fell in between the extreme participants. The general pattern of the evolution of elementary IMs showed that participants with higher levels of change (e.g., P5, diff = 7) followed a steady pattern of a decrease in the probability of these IMs over time, whereas participants with lower levels of change (e.g., P9, diff = 0) showed a general steady pattern of an increase in the evolution of elementary IMs' probabilities over time.

The same model was used for complex IMs. The results showed that the parameter change had a significant positive impact on this group's probability of occurrence of IMs ($p = .041$), with this parameter explaining 70% of the variance of the complex IMs proportion ($R^2 = .70$). There was also a significant positive effect on the probability of emergence of the complex IMs on the parameter time ($p < .0001$), with this parameter accounting for 73% ($R^2 = .73$) of the variance in complex IMs over time. Finally, the parameter interaction between time and change showed significant positive effects ($p = .0001$) on the probability of occurrence of complex IMs, considering 72% of the variance in the proportion of this group of IMs ($R^2 = .72$) over time. The
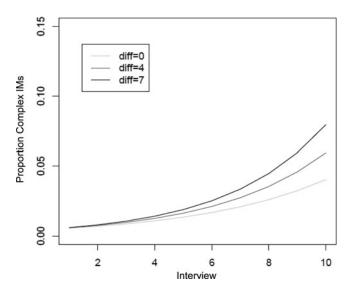
FIGURE 2 Proportion of complex IMs. The different gradient lines represent the evolution of complex IMs probabilities between two participants with extreme differences in levels of change [P9 (diff = 0), P5 (diff = 7)], and two participants with intermediate levels of change [P3 and P10 (diff = 4)].

results also showed some differences among participants regarding the proportion of the complex IMs at the first interview; nevertheless, this difference was only marginally significant ($p = .07$).

Figure 2 illustrates the evolution of the likelihood of complex IMs over time. The different gradient lines represent the evolution of complex IM probabilities, once again, between two participants with extreme differences in levels of change [P9 (diff = 0), P5 (diff = 7)] and two participants with intermediate levels of change [P3 and P10 (diff = 4)]) on the scaling task. All other participants fell in between the extreme participants. As shown in this figure, until interview 6 the probabilities of complex IMs occurrence were similar for all participants. However, from interview 6 until the end of the study, although all participants had started to exhibit higher rates of increase, the highest rate of increase was achieved by participants with higher levels of change (e.g., P5, diff = 7). Participants with lower levels of change (e.g., P9, diff = 0) were those with the lowest rates of probability of complex IM occurrence over time.

DISCUSSION

In this study, we aimed to understand how change unfolds in everyday life according to the innovative moments model: specifically, to check whether IMs emerge in everyday life, without psychotherapy, and to analyze whether there were differences between elementary and complex IMs occurring over time among participants with different levels of change.

Regarding the first research goal, our findings showed that the IMCS is a suitable tool for studying psychological change as it unfolds in everyday life. The IMs overall proportion achieved 21.41% of the total time of the interviews, which means this amount of time was spent in elaborating innovation on the problematic pattern of meaning. These results were similar to what was

found in psychotherapeutic samples (Alves et al., 2014; Gonçalves et al., 2012; Matos et al., 2009; Mendes et al., 2010).

Our results also showed that the emergence of elementary IMs (action, reflection, and protest IMs) in the study was not predicted by time, change, or the interaction between time and change. These findings were also consistent with ones from previous studies in psychotherapy and from the overall IMs research (Cunha et al., 2012; Gonçalves & Ribeiro, 2012), which suggests that elementary IMs seem to play a less fundamental role in psychological change. Nevertheless, in our study, these more elementary types of IMs (new thoughts, feelings, and behaviors distinct from the problematic ones) seemed to be associated with the maintenance of difficulties, as they increased in participants with lower levels of change. We speculated that elementary IMs were used as a form of coping with the inability to change. Thus, elementary IMs could be a type of compromise solution: The person produces an innovation that does not threaten problematic personal stability but simultaneously is incapable of producing long-lasting change. This interesting pattern is different from what was found in psychotherapy, in which these IMs seem to be precursors of complex IMs in good-outcome cases (Gonçalves & Ribeiro, 2012).

In contrast to elementary IMs, time and interaction between time and change predicted complex IMs unfolding over time—that is, reconceptualization and performing change IMs. More specifically, our findings showed that the proportion of complex IMs increased over time primarily in participants with higher levels of change. These results, as predicted by the innovative moments model (Gonçalves et al., 2014; Gonçalves & Ribeiro, 2012), further supported the key role of more complex IMs in psychological change (e.g., Alves et al., 2014; Cunha et al., 2012; Gonçalves & Ribeiro, 2012)—that is, more effective psychological change in everyday life seems to be associated with more complex IMs. This means that people who evaluated themselves as changing during the period of the study were more able to create contrasts between the initial problem and a new more adjusted position, were able to describe what allowed them to achieve this transformation (these two components are part of reconceptualization IMs), and were also able to talk about new life expectations and future projects (through performing change IMs).

Our findings also converge with previous research on natural psychological change following difficult live events (Friedlander et al., 2013; Gianakis & Carey, 2011; Higginson & Mansell, 2008). According to these studies, change in everyday life tends to be associated with reflexive processes characterized by increased insight, meaning reorganization, and feelings of self-control, activated by critical events (Friedlander et al., 2013; Gianakis & Carey, 2011). It is clear from our data that successful change tends to be associated with higher levels of complexity in reflexive processes (associated with reconceptualization and performing change IMs). Therefore, psychological change in everyday life may depend not only on being able to think, act, and feel differently about the difficulties—present in more elementary IMs (action, reflection, and protest IMs)—but also on the ability to achieve a metacognitive perspective of oneself through more complex types of meaning making—that is, complex reflexive processes (Losavio et al., 2011; Park, 2010).

Moreover, our results suggested that, without this evolution in the level of complexity of IMs unfolding over time, these more elementary IMs (i.e., action, reflection, and protest IMs) might be related to the maintenance of difficulties. These results are in line with previous findings, which showed that searching for meaning by itself is not associated with positive change;

the person must engage in more complex reflexive processing that will allow new meanings to emerge (Linley & Joseph, 2011). This is an interesting line of research for the future: how elementary forms of innovation may lead a person to become "frozen" in the same pattern, becoming entrapped in it. This is perhaps similar to what strategic therapists describe as "more of the same"—that is, an ironic pattern in which the more the person has the feeling that he or she is creating novelty and tries to solve the difficulties, the more the problematic pattern is consolidated (see Fraser & Salovey, 2007; Watzlawick, Weakland, & Fish, 1974). Obviously, in this study this possibility is speculative as we have not studied how IMs, which are forms of innovation, can contribute to this paradoxical result (i.e., stability). In other studies (Ribeiro, Gonçalves, Silva, Mendes, & Brás, 2016) we have approached this topic through the study of ambivalence in psychotherapy: instances in which an IM emerges but is quickly aborted in its change potential through a reemphasis of the problematic pattern, as in the example, "I been feeling better lately (reflection IM), but I know it won't last. I'm just a depressive guy." We termed these discursive strategies of devaluation of IMs through a reemphasis of the power of the problematic pattern as a "return to a problem" marker. Previous studies (Gonçalves et al., 2011) have suggested that more elementary IMs are easier to attenuate in their change potential by the emergence of a return to the problem marker, which leads us to propose that the observed pattern of elementary IM in the unchanged group could be the result of ambivalence toward change.

This study has several limitations. First, the use of regular interviewing throughout the 4-month procedure may, in fact, even if not intentionally, have interfered with people's spontaneous change processes. Although the interviewer tried to assume a nontherapeutic position throughout the interviews, research on psychotherapy shows that the relational dimensions of treatment are therapeutic in themselves (Wampold & Imel, 2015). The simple fact that some of these participants could have felt socially isolated and unable to share their difficulties with family or friends may have created an opportunity for change as they were sharing their inner thoughts and feelings with an interviewer who was attentive and friendly. Despite our efforts to minimize bias of the interviewer in the results, future studies should address this topic. Several possibilities could be tested, including collecting results with more automatic procedures or clearly separating researchers doing different tasks in the research team, like using naïve interviewers and separating the task of collecting and coding materials. Nevertheless, to our knowledge, this was the first study to approach psychological change in everyday life using a longitudinal design.

A second limitation was the retrospective evaluation of the level of difficulties at the beginning of the study. Future studies should use measures of change along the way. The major problem is that traditional measures used in psychotherapy are not sensitive to the changes that occur in studies such as this, as there is an absence of psychopathological symptoms. The fact that change was evaluated from the perspective of the participants and IMs were evaluated from an independent observer reduces the possibility of a "halo effect" between the measures. Finally, this is just an exploratory study, as the sample was small and highly heterogeneous in terms of the difficulties participants shared; therefore, future research should analyze larger samples. Future studies on this topic should also focus on the role of variables related to adaptive daily functioning (e.g., social support, coping strategies) and try to illustrate how effective daily problem resolution and its underlying change processes are mediated or moderated by these kinds of external resources, contingencies, and personal skills.

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