Creating and Testing the Effectiveness of Hypothetical Scenarios Which Elicit Anger and Hurt in Romantic Relational Contexts*

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Researchers interested in emotions and romantic relationships have long been struggling to find efficient and reliable emotion elicitation techniques. In this article, we present the work of creating and testing the effectiveness of hypothetical scenarios that elicit anger and hurt in romantic relational contexts. In study one, two hypothetical scenarios for each emotion were created using the most frequent categories of recalled affective events. Further on, we tested their effectiveness in eliciting anger or hurt in three different phases. In study two, 337 participants, aged between 18 and 40 (M = 19.93; SD = 3.17), read the scenarios and rated them according to several criteria such as arousal, discreteness, positive and negative induced affectivity. We found that our hypothetical scenarios were effective on discreteness, arousal, and positive and negative affect for eliciting anger and hurt in the contexts of romantic relationships.

Keywords: hypothetical scenario, anger, hurt, emotion elicitation techniques, romantic relationships

Highlights:

- Creation and testing of a new emotion elicitation tool.
- The new tool, i.e. hypothetical scenarios, was proved to be efficient in eliciting anger and hurt in romantic contexts.
- The hypothetical scenarios have a good level of ecological validity and standardization.
- The hypothetical scenarios have theoretical and practical implications.

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The crucial role of emotion in normal and abnormal human functioning creates the constant need to develop efficient and reliable techniques for eliciting emotions in different social contexts. Some of these techniques are: films (Gross & Levenson, 1995; Schaefer et al., 2010); dyadic interactions tasks (Driver & Gottman, 2004; Roberts et al., 2007); social psychological methods (Harmon-Jones et al., 2007), music (Eich et al., 2007); autobiographical recall (Salas et al., 2011; Philippot et al., 2003); facial expression (Matsumoto & Ekman, 2004; Uhrig et al., 2016); positive and negative feedback (Belschak & Den Hartog, 2009); dyadic scenario recorded (interactive emotional dyadic motion capture database – IEMOCAP; Busso, et al., 2008); hypothetical scenarios (Finch, 1987; Siemer & Reisenzein, 2007).

Tasks based on affective recall events and hypothetical scenarios are among the most widely used techniques for eliciting emotions (for a review, see Joseph et al., 2020). In comparison with other techniques, hypothetical scenarios are: (a) easy to use in a laboratory context or in the natural field (Mills & D'Mello, 2014); (b) may be more appropriate to elicit emotions such as anger, hurt, contempt which have an interpersonal character (for a review, see Joseph et al., 2020); and (c) the elicited emotions are more realistic and similar to emotions occurring in day-to-day interactions (Harmon-Jones et al., 2007).

Previous studies have already successfully elicited emotions using hypothetical scenarios. However, the studies on emotion eliciting process using hypothetical scenarios based on affective recalled events, in an interpersonal context, are scarce. Thus, to cover this gap, the aims of the present studies were to create and assess the efficiency of two different hypothetical scenarios, one for romantic relational anger and another for romantic relational hurt.

Emotion Elicitation Techniques

Various approaches have been proposed on emotion elicitation process. For instance, identifying activators of emotions or creating and assessing the effectiveness of different techniques for eliciting emotions are some examples of approaches.

A study of emotions with scientists as participants (Izard, 2010) found the following six main categories of emotion activators: events or situations that present opportunities and challenges along with innate and classically conditioned stimuli; goal-oriented activities; ongoing emotion-cognition interactions; memories, images and appraisal processes; and social interactions, affiliation, and spontaneous changes in neurobiological systems/processes. These categories of suggested emotion activators are numerous, contrasting, and with different functions. Moreover, so many different activators require different techniques for eliciting emotions. For example, Gerrards-Hesse et al. (1994) proposed one classification of mood induction procedures, proposing the categories of free mental generation of emotional states (autobiographical affective recall), guided mental generation of emotional states (emotion eliciting material is presented with the task to get into the target mood), presentation of emotion-inducing

material (without the explicit task of getting into the target mood), need-related emotional situations (subjects' exposure to situation which may activate certain needs), and generation of emotional relevant physiological states (systematic variation of physiological states). These techniques can be grouped in internal and external mood induction procedures. Taking them into account, Salas et al. (2011) tested the efficiency of one internal procedure (affective story recall) and one external procedure (films) in eliciting specific emotions. The results showed that both procedures were equally effective in eliciting the target emotion.

McRae et al. (2012) presented the differences between bottom-up and topdown emotion generation procedures. A bottom-up procedure refers to emotions generated in response to physical proprieties of the stimulus, while top-down procedure emotions are elicited by the cognitive appraisal of the eliciting event. On one hand, in a naturalistic context, bottom-up emotions are generated by biological negative stimuli, for example, through encounters with fearsome animals, while, in a lab context, emotions are generated by techniques such as the presentation of images with emotional content. In a naturalistic context, emotions are generated top-down by interpretations or cognitive appraisals of complex social interaction, while in the lab conditions, emotions are elicited by autobiographical scripts or hypothetical scenarios in which emotion-induced appraisals of events are presented.

More recently, Kory and D'Mello (2015) presented another classification, suggesting the existence of passive and active methods for eliciting emotions in different contexts. For example, passive methods are represented by images, films or music, while active methods are represented by social and dyadic interactions. Moreover, while in the case of passive methods, the stimuli's characteristics are emphasized, in the case of active methods, the event's elicitation appraisal is highlighted. Active methods have higher ecological validity, elicit more naturalistic emotions and can induce more complex emotions as anger or guilt, in comparison with passive methods (Kory & D'Mello, 2015).

In reviewing the literature, it can be seen that internal procedures, topdown emotion generation, and active methods have similar characteristics. They are characterized by cognitive focus; emotions are elicited as response to an event's appraisal, are more efficient in eliciting more naturalistic and complex emotions such as anger, contempt or guilt. External procedures, bottom-up generation, and passive methods are more stimuli-oriented emotions; they are elicited as responses to the stimuli's characteristics; they are able to capture the participants' attention well and can be easy to implement.

We may consider that internal procedure, top-down emotion generation and active methods are "in individual" methods to elicit emotions, while external procedures, bottom-up generation and passive emotions as "out individual" methods to activate emotions. The results related to the effectiveness of "in" and "out" individual emotions elicitation procedures are mixed. While some studies have suggested the superiority of "in individual" methods over "out individual" methods (Westermann et al., 1996), others have suggested the superiority of

"out individual" methods over "in individual" methods for eliciting emotions (for a review, see Joseph et al., 2020). However, there are also studies, which suggested that there are no differences between these two types of emotion elicitation techniques and both can be successfully used for eliciting emotions (Salas et al., 2011).

McRae et al. (2012) suggested that day-to-day emotions are the result of blending of bottom-up processing of stimuli and top-down conceptual processing. Moreover, it is clear that the biggest advantage of "in individual" emotion elicitation procedures is related to the ecological validity since the participant is using personal and relevant events to activate specific emotions. At the same time, "out individual" methods have a higher level of standardization comparing to the "in individual" procedures. The present validation study aimed to create hypothetical scenarios specifically for romantic relational contexts based on "in" and "out" individual methods of eliciting emotions and to assess their effectiveness.

Hypothetical Scenarios Tool: Elicited Emotions

What task should be achieved by hypothetical scenarios in emotion and romantic relationships research? Traditionally, it was accepted that emotions eliciting techniques should elicit discrete or basic emotions. Philippot' study (1993) is a good example. The aim of that study was to assess the efficiency of ten movies for eliciting five basic emotions: happiness, disgust, fear, anger, and sadness. Later on, Gross and Levenson (1995) assessed the efficiency of fourteen films in eliciting seven discrete emotions: amusement, anger, contentment, disgust, fear, sadness and surprise. As it can be observed, six out of these seven emotions are basic emotions (Ekman & Cordaro, 2011). More recently, the need for stimuli for other types of emotions than the basic ones has been suggested (Schaefer et al., 2010), as well as the need for stimuli for eliciting other kinds of affective states (Joseph et. al, 2020; Rottenberg et al., 2007). One attempt to cover this gap was made by Schaefer et al. in their study of 2010. In their list they included tenderness, which is a positive, attachment-related emotion.

In addition, the hypothetical scenario tool needs to offer the possibility of exploring the most frequent and studied emotions within romantic relationships. Firstly, it was found that anger and hurt are among most frequently experienced emotions within Romanian and Spanish young couples (Ursu et al., 2020a). Secondly, anger and hurt are often studied in the field of emotions and romantic relationships on account of their diverse consequences on romantic relationship outcomes. More precisely, anger triggers individuals to respond in destructive, defensive ways to their partners, resulting in the victim's dissatisfaction, their low commitment (Sanford & Rowatt, 2004), their desire to hurt the target (Ekman & Cordaro, 2011), and is associated with lower marital satisfaction and with concurrent marital discord (Johnson, 2002).

At the opposite end, expressing hurt in adequate ways develops intimacy between partners, while expressing it inadequately may make partners distance from each other (L'Abate, 1977). Moreover, regardless of their relationship's quality, the partners tend to distance themselves from the source of the messages if the messages are perceived as being intentionally hurtful (Vangelisti & Young, 2000). Further, anger, a basic emotion (Ekman, 1992), and hurt, an emotion from the sadness family (Shaver et al., 1987) are different in terms of their basic versus non-basic character. In addition, the need for stimuli validated on other emotions than the basic ones were suggested (Joseph et. al, 2020; Schaefer et al., 2010). Lastly, the taxonomy of negative emotions experienced in romantic relationships suggested the existence of four types of negative emotions, namely hard, soft, flat, and fear-based emotions (Dimidjian et al., 2008; Sanford, 2007; Sanford & Rowatt, 2004). All of them have different effects on romantic relationships outcomes (Sanford & Rowatt, 2004). Therefore, a hypothetical scenario tool needs to elicit the most frequent and specific emotions for the romantic relational context.

Emotion Elicitation within Romantic Relationships

Traditionally, emotions in romantic relationships were mostly studied in conflict contexts. Partners had to discuss about a sensitive topic in naturalistic contexts (their homes; Lavner et al., 2016) or in lab contexts (Gottman et al., 2015; Parkinson et al., 2016). These discussions (a) were videotaped and analyzed afterwards by researchers, or (b) researchers were analyzing and coding partners' emotional behavior during their interactions. Mostly, researchers have used methods such as observation and experiments in order to study how an emotion was expressed and how the partner reacted to that expression. In addition, the emotions' effect on different relational outcomes was also studied. For instance, the positive and negative emotions expression influences the partners' satisfaction and relationship maintenance (Carstensen & Gottman, 1995; Driver & Gottman, 2004; Gottman et al., 2015).

Although this method (versions of discussions about sensitive topics) has provided reliable results in the area of emotions and romantic relationships, same caveats can be discussed. For example, it is very costly and frustrating; it takes time to develop a coding system; it is difficult to find human and financial resources to select participants and to assess partners' experiences during their conversations about sensitive topics (Gottman, 1998). In addition, observational studies generate qualitative data, thus skills for analyzing qualitative data are required.

As shown above, it has become clear that while emotions can be elicited in different social contexts (friendships, family, romantic relationships) using diverse procedures, with different levels of effectiveness, several key issues remain under investigation. One of them is how to create efficient emotion elicitation tools based on the principles specific to "in" individual methods and having the "out" individual methods characteristics. We aimed to create hypothetical scenarios for romantic relational anger and romantic relational hurt based on "in" individual emotion elicitation methods because they (a) have a

higher ecological validity due to the use of personal and relevant events for eliciting emotions; (b) are able to elicit more naturalistic and complex emotions due to the presentation of social interactions; (c) are easy to use in laboratory or natural contexts; and (d) take a comparatively short time to complete/ implement. However, one of the most important points of criticism of the "in" methods is the low level of standardization, which is one of the most important advantages of the "out" methods. Thus, by testing the effectiveness of the hypothetical scenarios, we aim to address this critic. Other two important points of criticism of the "in" and "out" methods which should be addressed are memory bias and demand characteristics task. We minimized the effect of the memory bias because the participants' task will not be to remember a situation in which they felt anger or hurt within their romantic relationships. In addition, the demand characteristics effect is minimized by the instructions used. More precisely, participants were not told which emotion they should feel, they will evaluate which emotion they experienced and its intensity.

Overview of the Present Studies

Relying on these premises, the main purposes of these studies were to create and validate a new methodological tool for researchers interested in studying emotions and romantic relationships. More specifically, we aimed to extend the validated methodological tools for eliciting emotions by developing standardized hypothetical scenarios based on recalled affective events for specific emotions such as romantic relational anger and romantic relational hurt. Moreover, the standardized scenarios were conceived taking into account the "in" and "out" principles and characteristics of individual emotions elicitation techniques. Having a new tool is both practically and theoretically important for emotion research. It extends the techniques used for eliciting emotions and it offers flexibility to the researchers to use the most appropriate tool for the purpose of the study. Moreover, it encourages future research in the area of emotions and romantic relationships, and the future studies may have the potential to develop or form a new core of emotion theory in romantic relationships. The present article will firstly describe how the scenarios were created (pilot study). Second, we will describe how the scenarios' effectiveness was tested (study 2).

Pilot Study

Creating the Hypothetical Scenarios

The main frameworks used for creating the hypothetical scenarios are represented by the social appraisal theory of emotions and network theories of affect (Bower, 1981; Fridja, 1988). We considered that emotions are elicited by events that are considered important to the individual's goals, motives or concerns, are perceived as real and are interpreted according to some appraisal dimensions by that individual (Fridja, 1988; Smith et al., 2006). The hypothetical scenarios will act based on the network theory of affect (Bower, 1981). More

precisely, when participants will read the scenarios, the knowledge nodes of similar events will be activated. In turn, these nodes will activate the nodes representing emotional information. The connections between these two types of nodes are reciprocal, thus, the activation of one will lead to the activation of the second one.

The scenarios were created based on the results of one qualitative research (Ursu et al., 2020b) which aimed to analyze which events elicit romantic relational hurt and romantic relational anger. Participants were asked to recall (a) affective events in which they experienced romantic relational anger and romantic relational hurt because of their partners' behaviors, attitudes (receptor condition); and (b) affective events in which their partners experienced the same emotions because of participants' behaviors, attitudes (source condition). The participants were young, the majority of them being involved in committed non-marital relationships.

The created hypothetical scenarios present different interactions between the intimate partners. Their interactions enabled us to create the social context in which the participants can transpose themselves for experiencing the target emotion. In addition, the scenarios present partners' reciprocal interactions/ behaviors, which emphasized the similarity of these interactions with intimate partners' day-by-day interactions. The high level of ecological validity relies on the fact that the situations used for creating the scenarios were those with the higher frequencies, from two different social contexts (receptor and source of emotion) and based on two European samples (Romania and Spain). In addition, affective autobiographical recall and accuracy of personal events presented are two more arguments in favor of the high level of ecological validity of the scenarios. Personal events presented happened within the ongoing emotional relationship between two individuals who were involved in a romantic relationship at the moment of the study. This also increases the naturalistic character of scenarios.

Based on previous studies (Gross & Levenson, 1995; Philippot, 1993) we decided to create two scenarios for each emotion. Moreover, this approach enables us to assess the effectiveness of each scenario. For the characters of the scenarios we chose the most common Romanian first names for males and females because the participants in this study were native Romanians. Moreover, with the exception of one of the character's name (Radu), all the other ones have an English correspondent version. We created scenarios which can apply successfully to women, but also to men. For the first version of the hypothetical scenarios, we used the categories with the higher frequencies from the two contexts (receptor and source of emotion).

Romantic Relational Anger

For the first scenario of romantic relational anger (A1) we used the following categories: inappropriate communication; treating the partner unfairly and being treated unfairly by the partner, and control. For the second scenario of romantic relational anger (A2) we used the categories deception and exclusion.

Romantic Relational Hurt

For the first scenario of romantic relational hurt (H1) we used situations from the rejection/ exclusion and undermining of self-concept categories. For the second scenario of romantic relational hurt (H2) we used situations from deception and retraction of feelings of love, commitment care and understanding.

Table 1 presents the steps in the scenarios' creating, testing and improving.

Table	1
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Phases of scenarios creating and testing

Scenario	Scenario's creation (Frequent categories from qualitative analysis)	Expert phase	Pilot-testing phase 1 – open-ended answers	Pilot-testing Pilot-testing phase 2 – multiple choices	Pilot-testing phase 3 – improved scenarios	Testing phase
Al (anger 1)	Inappropriate communication; treating and being treated unfairly by the partner; control	2 experts	The second version of the scenarios was used in order		Ill-conceived humor, house-keeping activities added	
A2 (anger 2) H1 (hurt 1)	Deception; exclusion Rejection/ exclusion; undermining of	read all four scenarios and they suggested some modification to improve scenarios' effectiveness	to see which emotions are elicited (which emotion is experienced by character and which emotion participants	The same scenarios were used in order to see if they elicit the target emotion	Unfairness added Injustice added	The improved scenarios were used in the testing phase in order to standardize them
H2 (hurt 2)	self-concept Deception/ retraction		would experience in the character's position)		No need to add a new category	

Experts' Revision

The first versions of the scenarios were revised by two experts (researchers who have previously done research on emotions, emotion processes and their impact at intrapersonal and interpersonal level) and they suggested some modifications for two of them. More precisely, they suggested changing some names and they made proposals for the items measuring the discreteness and arousal of emotions.

The study protocol was approved by the Ethics Committee of Alexandru Ioan Cuza, University of Iași, Romania.

Pilot-testing with Open-ended Answers

Method

Participants and Procedure. Two scenarios (one for romantic relational anger and one for romantic relational hurt) were given to forty-four third year

Psychology students (89% women, M = 22.68, SD = 3.92; aged between 22 to 38 years) with open-ended questions assessing the emotion the character experienced; and which emotion would the participant experience if s/he were in the character's position. The other two scenarios (one for romantic relational anger and one for romantic relational hurt) were given to another group of third year Psychology students with the same task. The first scenario was read and the participants filled out the questions at the beginning of the class, while the second scenario was read in the last 5 minutes of the class. We used this strategy to ensure the participants' emotional neutrality, which was obtained during the class. Moreover, we balanced the order of the two scenarios.

Results

The results showed that the most frequently experienced emotion in the case of A1 scenario was anger (10 out of 24; the next most frequent emotion was surprise, 3 out of 24). For the H1 scenario the most frequent emotion was sadness (10 out of 24, the next most frequent emotions were disappointment, 8 out of 24, and hurt 3 out of 24, respectively). With respect to the second scenario (A2 and H2), the results showed that the most frequent emotion in the case of A2 scenario was anger (9 out of 17, the second most frequent emotion was frustration, 3 out of 17), while in the case of H2 scenario it was disappointment (5 out of 16, the next most frequent emotions were anger, 3 out of 16, and fear 2 out of 16, respectively).

Discussion

After analyzing the existing taxonomy of negative emotions experienced in romantic relationships (soft, hard, flat and fear-based types; Dimidjian, et al., 2008; Sanford, 2007; Sanford & Rowatt, 2004) and the open-ended answers, we decided to propose hurt, anger, fear and boredom as multiple choices for scenarios. These emotions are the best examples of the four types of negative emotions experienced within romantic relationship (Dimidjian, et al., 2008; Sanford, 2007; Sanford & Rowatt, 2004). In addition, according to the theory of negative emotions experienced within romantic relationships, one study with Romanian and Spanish young participants found that (a) anger, hurt, fear and boredom were frequently experienced emotions within young romantic relationships in the past three months and (b) anger, hurt, boredom and anxiety were the most intense emotions experienced within couples in the past two weeks (Ursu et al., 2020a). Furthermore, besides boredom, these emotions (anger, hurt, and fear) were frequently mentioned by the participants when reading the scenarios.

Pilot-testing Multiple Choices

Method

Participants and Procedure. Ninety first-year Psychology students (85% women; M = 20.17, SD = 4.07; aged 18 to 38 years) read two scenarios (one for romantic relational anger and one for romantic relational hurt) with

multiple choice statements. Their task was to evaluate which was the emotion experienced by characters in the scenarios. They received extra course credit for participating in this phase of the study. The procedure was similar as in the pretesting open-ended phase.

Results

The results presented in Table 2 showed that the most frequently experienced emotion in the case of A1 scenario was anger (the target emotion, 22 out of 42; the next most frequent emotion was hurt, 16 out of 42). For the H1 scenario the most frequent emotion was hurt (the target emotion, 26 out of 53, the next most frequent emotion was anger, 18 out of 53). With respect to the second scenario (A2 and H2), the results showed that the most frequent emotion in the case of A2 scenario was hurt (the non-target emotion, 20 out of 44, the second most frequent emotion was anger, the target emotion, 18 out of 44), while in the case of H2 scenario it was hurt (the target emotion, 29 out of 39, the next most frequent emotion was anger, 7 out of 39).

Table 2

Results of pilot studies (frequencies of emotions elicited for each scenarios)

Phases of pilot study									
	1.2. Pilot-testing multiple choices				1.3. Pilot	1.3. Pilot-testing the improved scenarios			
Scenario	Anger	Hurt	Fear	Boredom	Anger	Hurt	Fear	Boredom	
Anger									
A1	22	16	4	0	9	7	0	0	
A2	18	20	4	2	16	5	1	0	
Hurt									
H1	18	26	8	1	2	8	0	1	
H2	7	29	3	0	3	15	1	0	

Discussion

After analyzing the results, we have realized that the scenarios were eliciting other emotions along with the target emotion. The frequencies for anger and hurt emotions were quite similar for three out of four scenarios. This aspect is consistent with the literature, which suggests that the same situation may elicit anger, but also hurt (L'Abate, 1977). To improve the scenarios, we reviewed the categories and we decided to add new situations for three out of four scenarios. Thus, for A1 scenario we added the ill-conceived humor and housekeeping categories. For A2 scenario, we added the unfairness category. For H1 scenario, we added the injustice category.

Pilot-testing the Improved Scenarios

Method

Participants and Procedure. The improved scenarios were pretested with another sixty-eight first year Psychology students (90% women, M = 19.91, SD = 3.53, aged between 18 to 35 years) that received extra course credit for their

participation. They received a link and they had to fill in the questions for one scenario. Their task was to choose which emotion was felt by the character.

Results

After analyzing the results, we have noticed that the highest frequency for the A1 and A2 scenarios was anger (9 out of 15 for A1, and 16 out of 22 for A2), while it was hurt for H1 and H2 (8 out of 11 for H1, and 15 out of 18 for H2) (see Table 2).

Study 2

Research Design

A 2 x 2 mixed design was used, with the type of emotion (anger vs. hurt), as a between-subjects variable (see Results, question 3) and scenario condition (A1 scenario and H1 scenario vs. A2 scenario and H2 scenario; see Results, question 1 and question 2) as a within-subject variable.

Method

Participants

The initial sample consisted of 369 participants. Because 32 of them (3 for A1 scenario, 8 for A2 scenario, 11 for H1 scenario and 10 for H2 scenario) (2 males and 30 females) responded using the link corresponding to the other gender, we decided to eliminate them. Thus, the final sample consisted of 337 students. All of them are first year students from Alexandru Ioan Cuza, University of Iaşi and participated in the experiment for course credit or for extra course credit. The final sample consisted of 57 males (17%) and 280 females (83%), aged from 18 to 40 years old (M = 19.93; SD = 3.17). At the time of the study 56% of participants were single, 38% were involved in a committed relationship, 2% engaged and 4% married. Moreover, 95% of them graduated high school, while 4% graduated bachelor's degree studies and 1% graduated master's degree studies.

Procedure

The A1, A2, H1, and H2 scenarios were used to test their effectiveness in eliciting romantic relational anger, and romantic relational hurt, respectively. We used a quasi-experimental design, with a between-subjects variable (comparisons between scenarios) and within-subjects variables (test-retest for PA and NA; comparisons between target and non-target emotion in each scenario).

First year students were invited to participate in this study. They were told that the study concerns emotions experienced within romantic relationships. Eight different links were prepared, four links in which we used engendered hypothetical scenarios for eliciting anger and four links for hurt elicitation. Separate links were prepared for men and women, although they evaluated the same scenario. The same procedure of counter-balancing gender of character was used for the other three scenarios. Their task was to evaluate two scenarios (one for eliciting anger and one for eliciting hurt). We randomized the order of the scenarios. The first scenario was read and participants filled in the questionnaires at the beginning of

the classes, while the second scenario was read and questionnaires were filled in at the end of the classes. In order to ensure emotional neutrality, participants were engaged in different individual and work-group tasks during the class.

The links contain the followings: (a1) in the first section participants agreed to the participation in the study and they filled in informed consent and socio-demographics items; (a2) if they were involved in a romantic relationship, they had to assess characteristics of their relationship as dyadic cohesion, dyadic satisfaction and dyadic consensus; if not involved, participants were able to move on to the second section; (b) assessment of positive and negative affect in the past month; (c1) evaluation of momentary positive and negative emotions (before reading the scenario); (c2) reading the scenario and filling in (i) from a listed emotions, which emotion they would feel if they were be in the character's position, (ii) the intensity of the four emotions, if they were be in character's position; and (c3) evaluation of their momentary positive and negative emotions (after reading the scenario). In order to avoid order items effects, all items (besides the first section of the questionnaire) and answers (where it was possible) were randomized. After one week, the first author met with the participants and they proceeded to the debriefing.

Measures

Socio-demographics questions

This section included questions about the participants' gender, age, education, partner relationship status (with four response options: single, involved in a committed relationship, engaged, married), as well as the length of the relationship.

Revised Dyadic Adjustment Scale

To assess aspects related to romantic relationships we used the Revised Dyadic Adjustment Scale (Busby et al., 1995) adapted for the Romanian population (Turliuc & Muraru, 2013). This instrument has three dimensions: marital cohesion, marital consensus and marital satisfaction. We modified some items to be in agreement with the specificity of the majority participants' marital status – being involved in a romantic relationship and not being married. Internal consistency for each dimension was assessed by Cronbach's alphas. We obtained .71 for dyadic cohesion dimension, .77 for dyadic consensus, and.70 for dyadic satisfaction. All alphas indicate a good level of internal consistency.

Positive and Negative Affect Schedule

For assessing the positive and negative affect we used the short form but also the expanded version of Positive and Negative Affect Schedule. For the short version we translated the instrument used by Thompson (2007). The short form consists of 10-self-report items, 5 items measure the positive affect (PA) and the other 5 measure the negative affect (NA). We decided to use the short version because we wanted to evaluate the affectivity of participants in the past month. The Alphas coefficients of Positive Affect (PA) and Negative Affect (NA) are .76, and .74 respectively. Before and after the evaluation of the scenarios, we used the expanded version of PANAS-X (Watson and Clark, 1994) adapted for the Romanian population by Cotiga (2011).

Scenarios

After reading the scenario, the participants were asked to evaluate the emotion experienced and the intensity of the four emotions (hurt, anger, fear and boredom). The intensity of each emotion was assessed on a five-point Likert scale (*from 1 – not at all, to 5 – very much*).

Results

Preliminary Analysis

In order to check the participants' possible differences regarding several characteristics that may influence the emotion arousal and PA and NA, we conducted several preliminary analyses. Gender, education, and relationship status level differences among the two scenarios for romantic relational anger and romantic relational hurt were verified using the chi-square crosstabulation test. More precisely, we tested whether there are differences between the anger (A1 and A2 scenarios) and hurt (H1 and H2 scenarios) at gender, education and relationship status levels. In addition, the PA, NA average levels experienced in the past month, dvadic consensus, dvadic satisfaction and dvadic cohesion average levels differences were verified using independent *t*-test. More precisely, we tested whether participants assigned to scenario A1 group reported different levels of the PA, NA average levels experienced in the past month, dyadic consensus, dyadic satisfaction and dyadic cohesion levels comparing with participants assigned to scenario A1. We did the same analysis for the hurt scenarios. No differences were identified in terms of gender (χ^2 anger = 1.51, p = .21; χ^2 hurt = 1.31, p = .25), education (χ^2 anger = 2.92, p = .23; χ^2 hurt = 3.67, p = .16), relationship status (χ^2 anger = 6.64, p = .08; χ^2 hurt = 5.64, p = .13). Moreover, no differences were identified on either of the PA, NA, dyadic consensus, dyadic satisfaction, and dyadic cohesion individual level, all p > .05. Thus, participants from the two samples were similar in terms of gender, education and relationship status distribution. Moreover, we did not find differences in terms of experienced PA and NA in the past month between the participants from the two samples conditions. In addition, participants that were involved in a romantic relationship did not differ in terms of dyadic consensus, dyadic satisfaction and dyadic cohesion levels.

The Effect of Scenarios on Positive and Negative Affect

A paired *t*-test was conducted to compare the effect of each scenario separately on PA and NA, before and after the evaluation of each scenario. As presented in Table 3, for the A1 scenario significant differences between PA and NA before and after scenario evaluation were found. More precisely, the mean of the PA significantly decreased after the scenario, while the mean of NA significantly increased after reading the scenario.

In terms of PA before and after A2 scenario evaluation, no differences were found. However, contrary to our expectations, the NA intensity mean after the scenario's evaluation was significantly lower comparing to the NA intensity mean before the scenario evaluation (see Table 3).

Table 3

			Affects					
	Positive	affects		Negative				
Scenario	Before M(SD)	After M(SD)	t	Before M(SD)	After M(SD)	t		
Anger								
A1	3.24 (0.82)	2.97 (0.83)	5.24**	1.81 (0.85)	1.93 (0.87)	-2.43*		
A2	3.06 (0.76)	3.04 (0.89)	0.48	1.98 (0.86)	1.84 (0.77)	2.93*		
Hurt								
H1	3.34 (0.87)	2.893 (0.93)	7.82**	2.29 (0.81)	1.90 (0.82)	7.26**		
H2	3.07 (0.89)	3.055 (0.93)	0.24	2.07 (0.79)	2.26 (0.86)	-3.34**		
<i>Note.</i> * <i>p</i> < .05 ** <i>p</i> < .001								

Paired t-test results for each scenario on PA and NA before and after the scenario evaluation

In case of H1 scenario significant differences between PA and NA before and after the scenario evaluation were found. Specifically, both PA and NA intensity after the scenario's evaluation decreased, as depicted in Table 2. In terms of PA before and after H2 scenario evaluation, no differences were found. However, NA intensity mean after scenario evaluation significantly increased comparing to NA intensity mean of the before scenario evaluation.

Which Was the Emotion Elicited By the Four Scenarios?

A paired *t*-test was conducted to compare target emotion versus non-target emotions in each scenario.

Scenario A1

The results showed significant differences between anger as target emotion and hurt t(156) = 2.06, p < .05), fear t(156) = 15.14, p < .001) and boredom t(156) = 14.73, p < .001) as non-target emotions. The anger intensity mean (M =3.64, SD = 1.28) was higher compared to the intensity means of hurt (M = 3.43, SD = 1.33), fear (M = 1.87, SD = 0.98) and boredom (M = 1.76, SD = 1.07).

Scenario A2

No differences were identified between anger (M = 3.12, SD = 1.24) and hurt (M = 3.22, SD = 1.30) intensity means, t(169) = -.95, p > .05). However, significant differences were found between anger as target emotion on the one hand, and fear t(169) = 5.39, p < .001) and boredom t(169) = 14.20, p < .001) as non-target emotions on the other, as the anger intensity mean (M = 3.12, SD =1.24) was higher compared to the intensity means of fear (M = 2.42, SD = 1.31) and boredom (M = 1.54, SD = 0.99).

Scenario H1

The results showed significant differences between hurt as target emotion and anger t(168) = 2.50, p < .05), fear t(168) = 14.37, p < .001) and boredom t(168) = 14.83, p < .001) as non-target emotions; the hurt intensity mean (M =3.61, SD = 1.33) was higher compared to intensity means of anger (M = 3.38, SD = 1.25), fear (M = 2.92, SD = 1.11) and boredom (M = 1.63, SD = 1.00).

Scenario H2

The results showed significant differences between hurt as target emotion and anger t(166) = 9.88, p < .001), fear t(166) = 10.94, p < .001) and boredom t(166) = 14.34, p < .01) as non-target emotion. The hurt intensity mean (M =3.66, SD = 1.28) was higher compared to intensity means of anger (M = 2.77, SD = 1.14), fear (M = 2.71, SD = 1.19) and boredom (M = 1.72, SD = 1.07).

Which Is the Most Efficient Scenario For Eliciting Romantic Relational Anger and For Romantic Relational Hurt?

Firstly, we will present the effectiveness of the scenarios based on the scenario level analysis. Secondly, we will proceed to comparisons between scenarios at emotion level.

Scenario level

Means of emotion intensities in each scenario

A1 was more efficient to elicit the target emotion anger comparing to A2, while A2 elicited higher intensity of anger comparing to two out of three non-target emotions. Concerning romantic relational hurt scenarios, both scenarios (H1 and H2) elicited more intensely the target emotion hurt, compared to all non-target emotions.

PA and NA differences before and after the scenario's evaluation. A1 was more efficient in decreasing PA and increasing NA after the scenario evaluation, while A2 did not significantly decrease PA and, contrary to our expectations, did significantly decrease NA after the scenario evaluation. Results on romantic relational hurt scenarios revealed that H2 was more efficient in significantly increasing NA after scenario evaluation, but failed to significantly decrease PA, while H1 significantly decreased PA and also significantly decreased NA after scenario evaluation (see question 2 section, Table 3).

Emotion level

Means of intensities of target emotions in emotion elicitation scenarios

In order to assess the target emotion intensity means in emotion elicitation scenarios, an independent sample *t* test was run. More precisely, we compared A1 scenario anger intensity mean with A2 scenario anger intensity mean, H1 scenario hurt intensity mean with H2 scenario hurt intensity mean respectively. Significant differences were found: t(325) = 3.67, p < .001, as A1 scenario elicited anger (M = 3.64, SD = 1.28) more intensely compared to A2 scenario (M = 3.12, SD = 1.24). However, no significant differences were found between hurt intensity mean for romantic relational hurt scenarios: t(334) = -0.344, p > .05. The effect size for the target emotions for A1 and A2 scenarios and for H1 and H2 scenarios were computed using Cohen's d. According to Cohen (1992) proposal for interpretation of the d values the effect for anger (d = .412) tends to be medium, while the effect for hurt (d = .038) is small.

PA and NA after scenario's evaluation

An independent *t* test indicated statistically significant differences in mean of NA after romantic relational hurt scenario evaluation: t(334) = -3.898, p < .001, as H2 scenario elicited a significantly higher mean of NA (M = 2.26, SD = 0.868) in comparison to the H1 scenario (M = 1.90, SD = 0.82). However, no difference was found between A1 and A2 scenarios: PA: t(325) = -.72, p > .05; NA: t(325) = .94, p > .05. Moreover, there is no significant difference between H1 and H2 scenarios either on PA: t(334) = -1.59, p > .05.

Discussion

The present studies aimed to create and test the effectiveness of a new tool for emotions researchers in an experimental context according to various criteria. More precisely, we created two hypothetical scenarios for eliciting romantic relational anger and two scenarios for eliciting romantic relational hurt. Afterwards, we tested the effectiveness of these scenarios.

Several questions were addressed in creating these scenarios. Anger and hurt are emotions frequently experienced and studied in romantic relationships due to both their positive and negative effects on romantic relationships' dynamics and outputs (Feeney, 2004; 2005; Lemay Jr et al., 2012; Ursu et al., 2020a). Several studies have created and tested tools for eliciting anger at the general level (Gross & Levenson, 1995; Schaefer et al., 2010), while none focused on creating and testing techniques for eliciting hurt. We created hypothetical scenarios for eliciting anger and hurt using the most frequent categories presented in one qualitative study (Ursu et al., 2020b). The categories were established based on affective recall events presented by Romanian and Spanish intimate partners in two social conditions: receptor and source of emotions. In our pilot study, we pre-tested these scenarios and we added new features to them to elicit the target emotions. The result consisted of four scenarios applied to romantic relational contexts. The partners' reciprocal interactions emphasized the similarity of these interactions to day-by day partners' interactions, increasing the naturalistic character of the scenarios and also offering a good level of ecological validity (Harmon-Jones, et al., 2007; Mills & D'Mello, 2014).

One of the main points of criticism of affective recall events are related to memory bias and demand characteristics task because they may affect the accuracy of experienced emotion. Thus, the procedure used for creating and the one proposed for using the hypothetical scenarios enabled us to avoid their impact on emotion elicitation.

In study 2, several questions were addressed for testing the scenarios' effectiveness at the scenario level. First, the paired t test on PA and NA, before and after the scenario evaluation revealed significant scenario effect in case of A1. As expected, H1 successfully decreased PA, while H2 successfully increased NA. Contrary to our expectations, A2 and H2 failed to decrease PA and surprisingly A2 and H1 decreased NA. It can be seen a decrease in PA in the A2 and H2 scenarios, but it is not a significant one. One possible explanation might be the participants' resistance in experiencing negative emotions. In order

to keep an acceptable level of psychological wellbeing and dyadic satisfaction, people avoid or minimize the negative emotions' adverse effects. Moreover, another possible explanation involves sample composition and specific emotion display rules. More precisely, the feminine emotion display rules require the suppression of negative emotions and simulation of the positive ones (Simpson & Stroh, 2004). In our study, the majority of participants are females, thus maybe they suppressed the negative emotions and simulated the positive ones in order to be in accord with feminine display rules.

Secondly, the results showed that three out of four scenarios elicited the target emotion more intensely compared to all non-target emotions, while A2 scenario elicited more intense anger compared to two non-target emotions (fear and boredom); also no differences were found between anger and hurt intensity means. In terms of differences in target emotions intensity means, the results showed that A1 elicited the target emotion anger more intensely compared to A2, while H1 and H2 were equally efficient in eliciting the target emotion hurt. Combined, the results on scenarios level, emotion level, and PA and NA after the scenario evaluation suggested that two scenarios (A1 for eliciting romantic relational anger and H2 for eliciting romantic relational hurt) represent the best suggestions for researchers which are interested in eliciting negative emotions within romantic relationships.

Theoretical and Practical Implications

Our results suggest that we managed to create and validate a new tool for contexts related to emotions and romantic relationships. Moreover, although one of scenarios elicits anger, an emotion studied in the last three decades, as far as we know, no other authors created and validated a scenario for romantic relational anger. In addition, previous research on eliciting emotion techniques focused more on basic emotions or non-basic positive emotions such as amusement and tenderness (Schaefer et al., 2010), while the present study adds a new feature to the field by creating and validating one hypothetical scenario for eliciting hurt, a non-basic, negative emotion. It will be interesting to use these scenarios to elicit anger and hurt with the aim of assessing the impact of other emotional processes as emotion recognition and emotion regulation on relational outcomes (e.g. dyadic satisfaction, dyadic adjustment, dyadic cohesion or dyadic consensus). In addition, it will be interesting to see if personality traits or conflict style are moderators of emotion experiencing (the intensity of elicited emotion by hypothetical scenario) and emotion regulation strategies.

We recommend researchers to use A1 and H2 scenario for eliciting romantic relations, romantic relational hurt, respectively. They may instruct participants to read the hypothetical scenario and to evaluate which emotion they are feeling at the moment and which emotion they would feel if they were in the character's position. We proposed a list of four emotions: anger, hurt, boredom, and fear. In the case of the A1 scenario, anger is the target emotion, the other three being non-target emotions, while in the case of the H2 scenario, hurt is the target emotion. Moreover, we recommend participants to evaluate the intensity of the four emotions on a 5-Likert scale points. This may act as a manipulation check and

also may be more appropriate for advanced analysis. This manipulation check provides intensity of reported non-target emotions and this may offer additional information to researchers about the studied phenomena. These instructions will enable researchers to avoid memory bias; and the hypothetical scenarios will act like an active standardized method of eliciting emotions in which there is a presentation of intimate partners' interaction without the explicit task to get into the target mood or emotion. The recommendation of these instructions is also supported by Joseph and colleagues (2020). In one meta-analysis they found that reading scenarios with instructions was not significantly more effective than reading without instructions.

Some caveats concerning this study should be considered. First, the study based on which we created the scenarios was conducted in two specific cultural contexts (Romania and Spain), both of them with population of Latin descent. Being the first validation of the proposed hypothetical scenarios, it needs future validation before they could be recommended for wider application. Validation in different cultural contexts or with different populations would also be useful. In addition, assessing the effectiveness of the hypothetical scenarios with more objective parameters, such as physiological activation, brain activation or behavioral responses would also be useful. For these, we want to make them available for researchers. Secondly, similar to all previous studies on elicitation techniques, the present study relied on self-reports to assess emotion arousal. In the anger condition, there were small differences between anger and hurt mean intensities. These results are not surprising from the point of view of network theory (Bower, 1981). Specific events may be simultaneously associated with several emotions because it is less probable that a specific knowledge node is associated to only one emotion. In addition, other studies using autobiographical recall events (Mills & D'Melo, 2004) or films (Gross & Levenson, 1995; Scherer et al, 2012) for eliciting emotions have reported similar intensities between target and non-target emotions.

On the other hand, one and a half hour had passed between the evaluation of the first and second scenario. Moreover, participants were engaged in individual and group-work tasks that may have acted as emotion regulation strategies. Tasks such as reading, summarizing, discussing, debating topics related to the History of psychology require attention, involvement in the task, thus, most probably, the participants may have regulated their emotions using strategies as distraction. Another limitation may concern the participants' characteristics. The fact that the participants are mainly young women with above-average education may have influenced the responses mostly on anger scenarios. Emotionally Focused Couple Therapy has suggested that anger's primary emotions may be hurt or fear (Greenberg, 2010). Moreover, it was suggested that in the context of romantic relationships, anger is "the result of hurt feelings and fear and that underneath anger there is a great deal of unresolved and unexpressed pain and fear of further hurt" (L'Abate, 1977, p. 13). This may explain the small differences between these two emotions in the anger scenario. Another explanation for the small differences may be that, because of their characteristics (young women, above-average education level), the participants may have high emotional competence in recognizing complex emotions. More needs to be done in order to know the specificity of these two emotions.

Given that to the best of our knowledge the hypothetical scenarios represent the first attempt in creating and validating a tool using principles of "in" and "out" individual methods for eliciting negative emotions, we encourage others researchers to develop similar hypothetical scenarios for other non-basic, interpersonal emotions, such as guilt, shame, vulnerability.

In conclusion, the purpose of the present studies is to create and test the effectiveness of a new tool for eliciting negative emotions in romantic relational contexts. In view of this aim, the studies made several contributions to the field of emotion and romantic relationships: (a) the creation of a new tool for researchers interested in emotions elicitation techniques based on the principles specific to "in" and "out" individual methods; (b) the creation of one elicitation technique for hurt – an emotion previously not focused on; (c) testing the effectiveness of the hypothetical scenarios, and (d) making the new tool available (upon request) to emotions and romantic relationships researchers.

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Stvaranje i testiranje efektivnosti hipotetičkih scenarija koji indukuju ljutnju i bol u kontekstu romantičnih odnosa

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Istraživači zainteresovani za emocije i romantične veze dugo pokušavaju da pronađu efikasne i pouzdane tehnike indukcije emocija. U ovom članku predstavljamo pokušaj kreiranja i testiranja efikasnosti hipotetičkih scenarija koji indukuju ljutnju i bol u kontekstu romantičnih odnosa. U prvoj studiji su kreirana dva hipotetička scenarija za svaku emociju uz korišćenje najčešćih kategorija afektivnih događaja kojih se ispitanici prisećaju. Dalje, testirali smo njihovu efektivnost u pogledu izazivanja ljutnje i bola u tri različite faze. U drugoj studiji, 337 ispitanika, starosti između 18 i 40 godina (M = 19,93; SD = 3,17) je čitalo scenarije i ocenjivali su ih po nekoliko kriterijuma, kao što su pobuđenost (eng. arousal), diskretnost, pozitivna i negativna indukovana afektivnost. Našli smo da su naši hipotetički scenariji bili efektivni na diskretnosti, pobuđenosti i pozitivnom i negativnom afektu u pogledu indukovanja ljutnje i bola u kontekstu romantičnih veza.

Ključne reči: hipotetički scenario, ljutnja, bol, tehnike indukcije emocija, romantične veze

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Appendix 1.

Scenarios for romantic relational anger and romantic relational hurt in Romanian and English languages.

A1 – first scenario for romantic relational anger:

"Radu și Ioana sunt împreună de un an și câteva luni. În ultima perioadă, pare că nu se mai înțeleg; se ceartă din nimicuri, nu mai țin cont de nevoile și dorințele celuilalt, nu mai sunt dispuși să facă nici un compromis. În plus, în ultimul timp, Ioana e din ce in ce mai neimplicată în activitățile casnice. Ieri, înainte să meargă la cină cu prietenii lor, au decis de comun acord că nu se vor mai contrazice în public. La cină, însă, că de obicei, Ioana nu a acceptat nici una dintre ideile lui Radu, mai mult decât atât i-a spus acestuia de mai multe ori să tacă pentru ca nu are nimic interesant de spus, continuând cu glume proaste la adresa lui. Ajunși acasă s-au certat din nou, Ioana insistând că a procedat corect, indiferent de argumentele lui Radu."

"Radu and Joana have been together for a year and a couple of months. Lately, it seems that they don't understand each other anymore, they fight without reasons, they do not care about the needs and desires of each other and they are not open to make any compromise for their relationship. Moreover, lately, Joana has become more and more uninvolved in housekeeping activities. Yesterday, before joining their friends for dinner, they decided that they would not argue in public. But, during dinner, Joana rejected all of Radu's ideas, and on top of all that, she told him to shut up for a couple of times because he did not have anything interesting to say, continuing with bad jokes aimed at him. Arriving home, they argued again, Joana insisting that she hadn't done anything wrong, regardless of Radu's arguments."

A2 – second scenario for romantic relational anger:

"George și Ana vor sărbători în seara asta 5 luni de relație. Și-au propus să iasă să mănânce în oraș pentru a marca această ocazie specială. Dimineață, George a rugat-o pe Ana ca la ora 19 să fie gata pentru a nu pierde rezervarea. Au petrecut toată ziua separați, așteptând să se vadă seara. În jurul orei 19, când ajunge în fața blocului, o sună pe Ana, spunându-i fericit că a ajuns. Deși aceasta îi promisese că astăzi nu va întarzia, atunci când George o sunase, nu era pregătită pentru a ieși. După 40 de minute de așteptare, George pleacă acasă fără să o anunțe. Ana coboară, găsește florile aduse de George rupte și îl sună. Văzând că acesta nu răspunde, îi trimite un mesaj întrebându-l de ce a plecat și a aruncat florile."

"George and Anna will celebrate 5 months of being together tonight. They decided to go out to have dinner to mark this special event. In the morning, George asked very kindly Ana to be ready to go out at 7 pm in order to not miss the dinner's reservation. They spent the whole day separated, waiting to see each other in the evening. Around 7 pm, when George reached Anna's building, he happily called her for saying he had arrived. Although, she had promised that she would not be late, she was not ready to go out. After 40 minutes of waiting, George leaves without announcing this to her. Anna descends, finds the flowers brought by George torn in pieces and decides to call him. Seeing that he doesn't answer, Anne sends him a message asking why he left and why he threw away the flowers."

H1 – first scenario for romantic relational hurt:

"Georgiana și Alexandru sunt împreună de câteva luni. Georgiana simte că în ultimul timp Alexandru nu-i mai acordă atenție așa cum o făcea înainte. Ea crede că nu mai este la fel de implicat în relație și nici dispus să facă sacrificii pentru a petrece timp împreuna. Mai mult, într-o seară i-a spus că nu mai știe dacă mai simte ceva pentru ea, sugerându-i că poate ar fi bine pentru ei să ia o pauza."

"Georgina and Alex have been together for several months. Georgina feels that lately Alex has not been paying attention to her and to their relationship as he did before. She thinks that he is less involved in their relationship and he is no longer willing to make sacrifices and spend time together. Moreover, one evening Alex told her that he no longer knew if he felt something for her, suggesting that maybe it would be better for them to take a break from their relationship."

H2 - second scenario for romantic hurt

"De câteva luni, Maria și Andrei formează un cuplu. În ultima vreme, Andrei este din ce în ce mai ocupat, implicându-se în proiecte nemaiavând timp liber pentru a petrece cu Maria. Deși, aceasta i-a spus că este important pentru ea să meargă un weekend la munte să se relaxeze împreuna, Andrei a decis să plece la munte cu prietenii lui. Mai mult decât atât, din ce in ce mai des, o tot compară pe Maria cu noile lui prietene care, spre deosebire de ea, participă la activități de dezvoltare personală. Astăzi-dimineață, la cafea, i-a spus că dacă mai vrea să îmbrace bluza pe care o poartă, ar fi cazul să slăbească. După care, și-a verificat telefonul, întrebând-o "tu oare ma mai iubești?".

"Mary and Andrew have been a couple for several months. Lately, Andrew has been busier and busier, being involved in a lot of projects and he has not been spending time with Mary anymore. Although, she told him that it was important for her that they go for a weekend to the mountains to relax together, Andrew decided to go to the mountains with his friends. Moreover, more and more often, Andrew compares Mary with his new female friends, who unlike her, are participating in personal development activities. This morning, while they were having coffee together, Andrew told her, that if she still wanted to wear the blouse that she was wearing, it would be the time to lose some weight. Afterwards, he checked his phone, asking her: Do you still love me?"