

Ensuring content validity in instrument development: The case of the Scenes for Social Information Processing in Adolescence.

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Abstract

The Scenes for Social Information Processing in Adolescence (SSIPA) proposes to evaluate several cognitive steps suggested by the social information processing model, in addition to considering emotional states that may interfere with such rational processing of information. Psychometric evaluation of this instrument points to its construct validity but very little information was given on its construction process so as to guarantee that, as claimed, it accurately reflects the adolescents' unique social experiences. The current work presents detailed information on the three steps undertaken to develop the SSIPA: 1) three focus groups with a total of 23 adolescents and use of their verbalizations for item generation; 2) examination of the face validity of the items by 7 experts, who rated each item according to the content it was intended to evaluate, and 3) evaluation of test usability, understandability, and overall pertinence by a new sample of 23 adolescents. Focus groups and item evaluation procedures were considered optimal tools in helping to formulate items that surpass the initial acceptability threshold and accurately grasp

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the social information processing of adolescents, resulting in an innovative and psychometrically robust assessment instrument, potentially useful in clinical assessment and research.

Keywords: content validity; Scenes for Social Information Processing in Adolescence; social information processing; instrument development; adolescence; participatory approach

Garantir a validade de conteúdo na construção de instrumentos: O caso do Cenas para Processamento de Informação Social na Adolescência

Resumo

O Cenas para Processamento de Informação Social na Adolescência (SSIPA) propõe avaliar diversos passos cognitivos sugeridos pelo modelo de processamento de informação social, além de considerar estados emocionais que podem interferir com este processamento racional. A avaliação psicométrica deste instrumento aponta para a sua validade de constructo, mas muito pouca informação foi avançada acerca do seu processo de construção, de forma a garantir que reflete adequadamente, como se propõe, as experiências sociais únicas de adolescentes. Este trabalho apresenta informação detalhada acerca dos três processos que foram considerados para desenvolver o SSIPA: 1) três grupos focais com um total de 23 adolescentes e utilização das suas verbalizações para construção de itens; 2) análise da validade facial dos itens por 7 peritos, que avaliaram cada item de acordo com o conteúdo pretendido para cada item, e 3) avaliação da usabilidade, compreensibilidade e pertinência geral do instrumento numa nova amostra de 23 adolescentes. Os grupos focais e a avaliação dos itens constituíram ferramentas apropriadas para construir itens que cumprissem o princípio de aceitabilidade inicial e captassem com precisão o processamento de informação social de adolescentes, resultando num instrumento inovador e psicometricamente robusto, passível de utilização em contextos clínicos e de investigação.

Palavras-chave: validade de conteúdo; Cenas para Processamento de Informação Social na Adolescência; processamento de informação social; desenvolvimento de instrumento; adolescência; abordagem participativa

INTRODUCTION

The Scenes for Social Information Processing in Adolescence (SSIPA; Vagos, Rijo, & Santos, 2016) is a self-report instrument specifically designed to assess how adolescents

process social information when faced with customary, hypothetical, and ambiguous social situations. Its development was based on the social information processing (SIP) model (Crick & Dodge, 1994) and also took into consideration more recent assumptions. The SIP model specifically proposes that several cognitive steps take place between a social event and the behavioral response that is enacted in such event, including the assignment of meaning / interpretation of internal and external social cues, the definition of personal and/or social goals to be achieved within the situation, and the search, comparison and choice of the most advantageous behavior option (Crick & Dodge, 1994). Additionally, and according to Fontaine and Dodge (2006), the comparison between various behavior options is based on several criteria, namely the acceptability of the responses, their social and moral value, their expected outcomes, and ones' self-efficacy in performing them. Still, this seemingly rational processing of social information might be influenced by emotional states at every step (de Castro, 2004).

In line with these contributions to the rational and emotional processing of social information, the SSIPA resorts to six hypothetical, ambiguous, and provocative social scenes, which the respondent is asked to ponder as if s/he was facing it. Specifically, the respondent is asked to rate 1) the likelihood of attributing a neutral and a hostile intent to others; 2) the intensity of experiencing anger, sadness and shame in that situation; 3) the evaluation of assertive, passive, overtly aggressive, and relationally aggressive behavior options according to self-efficacy, personal and social goals, and moral/ social value, and 4) the likelihood of choosing such behavior options. Previous studies have provided psychometric appraisal for these measures namely evidence on their internal structure and internal consistency, proving them to be adequate for adolescent boys and girls (Vagos, et al., 2016).

This is not the only instrument designed to assess social information processing in general, nor its expression specifically in adolescents (for a good example, see the *likert* type version of the *Cuestionario del procesamiento de la información social*; Calvete & Orue, 2009). It is, however, to our knowledge, the only one that was designed taking directly the adolescents input on their own social experiences as the starting point. It is well established that adolescence represents a specific developmental stage between being a child and becoming an adult, where social experiences in particular become more salient because of the impact they seem to have on psychosocial development and on preparing to adopt adult roles and tasks (Kroger, 2004). Hence, the adolescents' experimentation of social behaviors as derived from their cognitive and emotional understanding of cues taken from social events should be uniquely considered. Valid findings on the SIP of adolescents require sound and specific assessment instruments (Fontaine, Yang, Dodge, Bates, & Pettir, 2008), which, in turn, depend upon rigorous test construction and psychometric evaluation (Murphy & Davidshofer, 2001).

Though the psychometric evaluation of the SSIPA has been previously published (Vagos, et al., 2016) and may (indirectly) validate its construction process, very little was said about such process, other than that a participatory approach was used for developing its items. Developing items is part of the procedure necessary to construct a test, in addition to creating administration and scoring procedures, and submitting this information to qualitative analysis (Urbina, 2004). The current work aimed to provide qualitative evidence on the SSIPA addressing its intended constructs, as they are considered by its intended target population, adolescents. Developing the SSIPA included a sequential process, involving the following three steps, which will be detailed below: 1) focus group discussions with adolescents, from which we gathered hypotheses for phrasing items that would address attribution styles, emotional states, and social behavior options, when facing provocative ambiguous social scenes; 2) evaluation of the face validity of the preliminary items using a sample of professional psychologists working with adolescents; and 3) evaluation of test usability by a new sample of adolescents. The sampling, methodology, results, and conclusions regarding each step within this research will be presented separately, followed by a general discussion.

STEP 1 – FOCUS GROUP FOR ITEM GENERATION

Participants and procedure

A purposive sampling procedure was used for focus group constitution, by selecting participants belonging to homogenous and pre-existing groups, *i.e.*, school classes. So, we choose to work with participants that shared particular characteristics (*i.e.*, age and social experiences), given that the literature suggests that this may make them more open to a comfortable, sincere, lively and fluid group discussion, from which relevant and diverse data on the topic at hand may arise (Ivanoff & Hultberg, 2006). On the other hand, they presented divergent social behavior patterns (*i.e.*, aggressive and indisciplined behavior *versus* normative social behavior; see below), which was intended as a way to obtain more diversified perspectives on adolescents' potential attributions, emotions and social behaviors.

Three focus groups were conducted, all with less than 12 participants, as to maximize individual participation and minimize group inhibition (Onwuegbuzie, Dickinson, Leech, & Zora, 2009). Authorization was sought from the ethics com-

mittee of the participating schools, the students' parents, and students' themselves. Schools are invested in protecting the safety and privacy of their students (Horowitz, Vessey, & Carlson, 2003), and so the schools did not allow audio or video recordings of the group discussions. Concomitantly, only general themes, but not individual participation, were disclosed at the schools' request.

The first focus group included seven 9th grade students (three girls; 14 to 17 years old) in risk of school drop-out. The second and third groups resulted from randomly dividing a class of sixteen 10th graders (seven girls; 16 to 17 years old) into two groups of eight students each; one group included four girls and four boys the other included three girls and five boys. All participants were Caucasian; participants from the first group primarily belonged to a low socioeconomic level, whereas participants from the second and third groups came primarily from medium socioeconomic level families. The participating students were selected by the schools based on behavioral criteria determined by the research team (*i.e.*, aggression for the first group as manifested in history of disciplinary processes due to aggressive behavior practiced in school contexts, and normative social behaviors for the second and third groups as demonstrated by the non-existence of such disciplinary processes) and on students and teachers' availability for participating in the study. The study was always introduced as intending to better understand how and why adolescents react to diverse social events.

Focus groups took place in the school and lasted about 60 minutes each. The same member of the research team moderated all focus groups and debriefings, thus contributing to more complete and internally consistent data gathering and more accurate data analysis (Ivanoff & Hultberg, 2006). The school psychologist was the second moderator, resorting to the experience of school personnel on what works better in their institutions (Horowitz et al., 2003), particularly regarding the promotion of fruitful, respectful and non-judgmental interactions among participants. A voluntary graduate student unrelated to this study was also present in all focus groups, acting as note-taker.

The focus groups agenda included: a) welcome and presentation of the moderators; b) informing on the general objectives of the task, namely to get a first-person perspective on how adolescents usually think, feel, and act in various social events; c) motivating for participation, by making it clear that participants themselves were considered experts on the topic and so their participation was highly valued, and that there were no right or wrong answers; d) task instructions, specifically to comment and express habitual thoughts, emotions and behaviors on six hypothetical situations; and e) confidentiality and participation agreement, where students were asked to voluntarily participate (none of the adolescents refused to participate) after being guaranteed confidentiality and informed that no losses (*e.g.*, receiving

a punishment and/or doing extra school work to compensate for missing classes in order to attend the focus group) or gains (e.g., receiving extra school credit for participating in the focus group) were to be obtained from participating in the group.

The hypothetical situations (henceforth referred to as scenes) were selected to exemplify three relationally and three overtly provocative scenes; both types of provocation were considered because they have been found to be associated with different forms of aggression (Crick, Grotpeter, & Bigbee, 2002). Following the definitions of overt and relational aggression (see Archer & Coyne, 2005), scenes were considered relationally provocative if they referred to the endangerment of the victims' social status or relations, namely not being selected (*i.e.*, scene 1), being ignored (*i.e.*, scene 3) and being refused (*i.e.*, scene 5). In contrast, scenes were considered overtly provocative if they represented a direct and overt injure to the victim him/herself, namely physical (*i.e.*, scene 4) or verbal (*i.e.*, scene 6) aggression to the self and aggression to personal objects (*i.e.*, scene 2). By selecting scenes addressing various forms of each type of provocation, we intended to grasp the general forms that relational and overt aggression may take. It should be noted, however, that the scenes themselves were also open to discussion, in trying to have them to more accurately represent the daily experiences of adolescents.

Each scene (see notes in Tables 1 and 2 for a full description of each scene) was presented independently, as were the corresponding prompting questions: *Does this commonly happen to you? What would you think if this happened to you? How would you feel if that happened to you? What would you do if this happened to you?* Additional probe-questions were made, whenever the moderators felt that a topic had not been saturated yet. Transitions between scenes were made by summarizing what had been said and then suggesting that another scene might be put to the same scrutiny. Immediately after each focus group, moderators and note-taker joined in a post session debriefing meeting where notes were reviewed and completed, including aspects referring to nonverbal communication that might aid in understanding the verbal messages.

A scissor and sort technique was used for data analyses (Onwuegbuzie et al., 2009; Stewart, Shamdasani, & Rook, 2006) based on open coding of the detailed note transcripts into theoretically *a priori* derived categories (*i.e.*, attributions, emotions and behaviors). Transcripts were marked according to one of the three *a priori* categories. Marked material for each category was then grouped up and sorted through again to find meaningful thematic units, represented by a keyword; quotation samples within each thematic unit were then analyzed to find common themes that represented the group discussion on that theme, and that could be arranged into items for an assessment instrument. All coding procedures were completed by the researcher/ group moderator and the note-taker; although it was

established a priori that if they were not in agreement, one additional member of the research team would be involved as rater, there were no cases of disagreement.

Results and discussion

The focus groups discussion about scenes 1 and 4 suggested slight changes to the wording of the scene itself. The first one was changed to a more general situation (*i.e.*, *Imagine that teams are getting formed for some game you want to participate in. People start getting together, but no one chooses you, and so you end up with no team*), based on insights that it was originally too gender-specific, as it referred to a football game being prepared for which the respondent would not be chosen. Regarding the fourth scene (*i.e.*, *Imagine that you are in class break talking to your friends. Someone goes by and pushes you*), groups suggested including an apology on the part of the aggressor. This apology was not included in the scene's description as such would prompt a more benign and less ambiguous perception of the event, thus precluding idiosyncratic SIP. So, scene 4 was kept unchanged, as were scenes 2, 3, 5 and 6, which were considered by the adolescents as customary events (see note of Tables 1 and 2).

For the first *a priori* category concerning attribution of intent, two thematic units were retrieved for all scenes, in line with the types of attribution usually referred to in the literature (De Castro, Veerman, Koops, Bosch, & Monshouwer, 2002; Fontaine et al., 2010; Nelson & Crick, 1999): neutral and hostile attribution of intent. Table 1 shows the quotation samples that were taken as representative of each thematic unit, as well as the items that were selected/ adapted from these quotations to potentially evaluate each thematic unit, in each scene.

Table 1
Thematic units, quotation samples and items derived from these quotations, for the category of attribution

Thematic units	Quotation samples	Item
Scene 1		
Neutral	Maybe there were just enough people to make two teams, excluding myself.	There had to be even teams so someone had to be left out.
Hostile	They don't like me. I don't get along with the people that are playing.	People don't like me and don't want me on their team.
Scene 2		
Neutral	It was an accident.	He/she was running and didn't stop in time.

	Hostile	He/she id it on purpose.	He/she did it on purpose because he is mad at me.
Scene 3	Neutral	They were distracted and did not recognize me. They didn't hear me.	They were distracted and didn't see me.
	Hostile	They were ashamed of me. They were mad at me	They don't like me and don't want to talk to me.
Scene 4	Neutral	It was an accident (he was off balance or was looking the other way). He/she was running from someone or in a rush.	He/she was distracted and lost his balance.
	Hostile	He/she doesn't like me. He/she was trying to tease or provoke me.	He/she did it on purpose to push me.
Scene 5	Neutral	They had prior engagements. They had valid motives (e.g. no money, no transportation or having seen the movie before).	They have no interest in that particular movie.
	Hostile	They don't like me. They don't like my company.	They don't like my company.
Scene 6	Neutral	He/she is upset with something else and is taking it out on me. He/she doesn't agree with me.	He/she is upset with something else and is taking it out on me.
	Hostile	He/she is too proud and thinks he is always right. He/she is provoking me.	He/she thinks he is always right.

Note: Scene 1: Imagine that teams are getting formed for some game you want to participate in. People start getting together, but no one chooses you, and so you end up with no team. Scene 2: Imagine that you are seating at your table before class starts. A colleague from your class comes running in and smashes into your table, so that all your things fall down on the floor. Scene 3: Imagine that you are walking on the street and pass by a group of people you know from your school who are talking amongst themselves. You tell them "Hi, what's up?" They keep on talking and don't reply. Scene 4: Imagine that you are in class break talking to your friends. Someone goes by and pushes you. Scene 5: Imagine that you are trying to arrange a movie night with some of your colleagues. When you ask them, all of them say no. Scene 6: Imagine that you are giving your opinion on something to your colleagues, and one of them, who doesn't agree with you, talks badly to you.

Thematic units for emotional states were straightforwardly taken from the quotations of participants, who referred to anger, by stating that they would feel *nervous*, *upset*, *angry*, *aggressive*, *outraged*, or *furious*; sadness, by affirming that they would feel *sad*, *isolated*, *lonely* or *disappointed*; and shame, by reporting that they would feel *ashamed*, *inferior*, or *excluded*. In these cases, the resulting items simply state

the name of the emotional state (i.e., anger, sadness and shame). For scenes 2 (i.e., *Imagine that you are seating at your table before class starts. A colleague from your class comes running in and smashes into your table, so that all your things fall down on the floor*), 3 (i.e., *Imagine that you are walking on the street and pass by a group of people you know from your school who are talking amongst themselves. You tell them "Hi, what's up?" They keep on talking and don't reply*), and 4 (i.e., *Imagine that you are in class break talking to your friends. Someone goes by and pushes you*), indifference (i.e., *I wouldn't feel anything; I wouldn't care*) was also noted by the participants, but was not classified into a thematic unit because it refers to an absence of emotional state, similar to the state of meaningless (Lazarus, 2000).

On the contrary, anger, sadness and shame are emotional states that result from appraising (i.e., attributing meaning to) contextual cues (Roseman & Smith, 2001), which, in this case, were taken from the scenes being presented. All scenes implied that the achievement of personal or social goals had been hindered (Lazarus, 2000), and thus logically elicited predominantly negative emotions. Anger, sadness and shame in particular seem reasonable emotional states to be elicited by the scenes' content, because they are associated to the perception of personal injury, devaluation and loss (Lazarus, 2006). Anger and sadness were the most commonly named, referring to the personal humiliation and experience of loss (Roseman & Smith, 2001) that the scenes intended to portray. Shame was reported less often, representing personal goals being frustrated by others (Lazarus, 2006). Bearing consistency in item options, the three emotional states were included as options for the six scenes.

Four thematic units resulted from the analyses of quotations referring to possible social behavior responses: assertiveness, passiveness, overt aggression and relational aggression. Table 2 shows the quotation samples that were taken as representative of each thematic unit, as well as the items that were selected/ adapted from these quotations to potentially evaluate each thematic unit, in each scene.

Table 2
Thematic units, quotation samples and items derived from these quotations, for the category of behavior options

Thematic units	Quotation samples	Item
Scene 1		
Assertiveness	Ask why I hadn't been picked. Find something else to do.	Ask why I hadn't been picked, because I really wanted to play.
Passiveness	Go home or any other place away from there.	Walk away quietly, so that no one would notice I hadn't been picked.
Overt aggression	Start a fight. Disturb the game.	Tell them: You'd better pick me next time or else...

Relational aggression	Complain to someone in authority (a teacher).	When no one was watching, would complain to my teacher or coach.
Scene 2		
Assertiveness	Ask the colleague why he/she had hit my table. Say "Be more careful next time".	Ask the colleague why he/she had hit my table and tell him/her to be more careful next time.
Passiveness	Pick my things up from the floor.	Pick the things from the floor and say nothing to the colleague.
Overt aggression	Threaten the colleague saying "Pick it up or I'll hit you". Damage the colleague's things.	Demand that he/she would pick up my things, and if he/she didn't I would do the same to his/her things.
Relational aggression	Complain to the teacher about it.	When no one was watching I would badmouth that colleague so no one would relate to him.
Scene 3		
Assertiveness	Ask them why they didn't answer me back, either by phone or text message.	When I found them again, I would ask why they hadn't answered me back.
Passiveness	Pretend it had never happened.	Do nothing and act as if it had never happened.
Overt aggression	Never talk to them again. Say "hey, what's your problem...?"	Tell them "hey, what's your problem...?"
Relational aggression	When they went by me and say hi to me, I wouldn't give them any answer.	When I was with my friends, I would tell them not to greet those people either.
Scene 4		
Assertiveness	Tell him to watch out.	Call the colleague and tell him/her to be careful next time so it wouldn't happen again.
Passiveness	Do nothing.	Do nothing and act as if nothing had happened.
Overt aggression	Start a physical fight. Push the colleague back.	Push him/her back.
Relational aggression	Comment with my friends what a stupid thing he/she did.	Talk about what happened with my friends, so they would not be friends with that person.
Scene 5		
Assertiveness	Change the day, time or movie, so they could go with me.	I would try to understand why they said no and schedule another day or movie so we could go together.
Passiveness	Go alone to the movies.	Do nothing and go to the movies alone.
Overt aggression	Say no to them when they invite me to do something in the future.	Next time they wanted my company, I would say no to them.
Relational aggression	Invite other people and make sure they wouldn't go.	I would gather other people to do something and not invite them.

Scene 6		
Assertiveness	Tell the colleague to stay calm.	Calmly tell him/her that we both were entitled to our opinions and there was no need to be rude.
Passiveness	Say nothing and ignore out of fear.	Shut up and don't give my opinions any more.
Overt aggression	Be rude to him too. Start a physical fight.	Talk badly to him/her also
Relational aggression	Humiliate him/her by proving him/her is wrong.	When he/she wasn't present I would tell my friends that he/she didn't know what he/she was talking about.

Note: Scene 1: Imagine that teams are getting formed for some game you want to participate in. People start getting together, but no one chooses you, and so you end up with no team. Scene 2: Imagine that you are seating at your table before class starts. A colleague from your class comes running in and smashes into your table, so that all your things fall down on the floor. Scene 3: Imagine that you are walking on the street and pass by a group of people you know from your school who are talking amongst themselves. You tell them "Hi, what's up?" They keep on talking and don't reply. Scene 4: Imagine that you are in class break talking to your friends. Someone goes by and pushes you. Scene 5: Imagine that you are trying to arrange a movie night with some of your colleagues. When you ask them, all of them say no. Scene 6: Imagine that you are giving your opinion on something to your colleagues, and one of them, who doesn't agree with you, talks badly to you.

Overtly aggressive and assertive responses were widely reported for all scenes; passive and relationally aggressive responses were less often and less clearly stated. These, nevertheless, represent important behavioral patterns (Archer & Coyne, 2005; McManus, Sacadura, & Clark, 2008), which have only recently begun to be investigated in relation to social information processing (e.g., Godleski & Ostrov, 2010). To allow this investigation to continue, such behavioral options were included in all scenes, and were built considering the participants' quotations and the theoretical definitions of the constructs (such as given by, for example, Archer & Coyne, 2005).

STEP 2 – EVALUATION OF THE FACE VALIDITY OF THE ITEMS

Participants and procedure

Five master students and two doctors in psychology that were at the moment researching and intervening with adolescents under the custody of the Portuguese Juvenile Justice Services were conveniently selected and invited to evaluate the face validity of the items

derived from the focus groups, given their experience with diverse adolescent behavior patterns. They were asked to code each item as representing one of the thematic units derived from the focus groups. Their participation was confidential, voluntary, and individual. Overall inter-rater agreement was taken as indicative of face validity for each item.

Results and discussion

We found very high inter-rater agreement, with all raters correctly coding six out of six items evaluating hostile attribution of intent, assertiveness and passiveness, and five out of six items evaluating neutral attribution of intent, relational aggression and overt aggression. Disagreement was solely found for one expert rating of the item intended for neutral attribution in scene 6, of the item aiming at relational aggression in scene 1, and of the item targeting overt aggression in scene 4. Considering that this still represented about 85% of overall agreement, and the items seemed to be in line with theoretical definitions of the constructs they intended to evaluate (see below), these three items were kept unchanged.

The item intended for neutral attribution in scene 6, reading *He/She is upset with something else and is taking it out on me*, implies negative emotions on the part of others, but not that they have the intention of harming the respondent, thus representing an accidental, random or contextual attribution of intent (de Castro et al., 2002). The item aiming at relational aggression in scene 1, reading *When no one was watching, I would complain to my teacher or coach*, refers to a concealed behavior aiming to harm the social status of others (Archer & Coyne, 2005), in this case of the peers who, hypothetically, did not choose the participant for their team. So, it is addressing relational aggression. The item intended for overt aggression in scene 4, reading *Push him back*, refers to physical behavior that directly causes harm to another person, in a face-to-face experience, which is the goal of overt aggression (Archer & Coyne, 2005).

STEP 3 – EVALUATION OF TEST USABILITY

Participants and procedure

Following the face validity analysis, items were associated to response scales in line with the constructs they intended to evaluate. The attribution of intent items

were rated on a likelihood scale (*i.e.*, *Why do you think this happened?* ranging from 1: not at all likely to 5: very likely). The emotional state items were associated to an intensity scale (*i.e.*, *How would you feel about...?*, ranging from 1: very little to 5: completely). The behavior options were associated to four response scales adapted from Fontaine and colleagues (2010), each considering one criterion for response evaluation proposed by Fontaine and Dodge (2006)⁴: self-efficacy (*i.e.*, *How capable are you of acting like this?*, ranging from 1: not at all to 5: completely); social and moral valuation (*i.e.*, *How good or bad do you think this is as a way of acting?*, ranging from 1: very bad to 5: very good); personal outcome expectancy (*i.e.*, *How would you feel about yourself if you acted like that?*, ranging from 1: very bad to 5: very good), and social outcome expectancy (*i.e.*, *How much would other people like you if you acted like that?*, ranging from 1: not at all to 5: completely). Lastly, a measure of probability was also included for each of the behavior options (*i.e.*, *What would you do in that situation?*, ranging from 1: not at all likely to 5: very likely).

The final organization of the instrument thus created included all six provocative scenes and corresponding items and response scales⁵ and was presented in this form to a randomly selected class of twenty-three 11th graders (seventeen girls; 16 to 18 years old). They were asked to evaluate the usability and functionality of the test, by commenting on the understandability and clarity of the items, instructions, and response scales. A speech communication approach was used (Boren & Ramey, 2000), in which participants are considered the experts who communicate out loud the mental processes they were employing when filling in the questionnaire, and in doing so inform the researcher on the major difficulties they encounter. The researcher may afterwards ask the participants' suggestions on how to improve the usability and understandability of the instrument.

Results and discussion

Adolescents rated the items and their specific instructions as relevant and applicable to their routine social lives, thus providing support for conclusions on the content quality, clarity, and lack of ambiguity of the final item list, instructions, and response scales (APA, 1999). Slight changes were suggested and introduced, particularly in the instructions for the self-efficacy measure and in randomizing the order by which different behavior options were presented across scenes. Students additionally pointed

4 Fontaine and colleagues (2006, 2010) also refer to an initial acceptability and applicability criterion. We did not include a scale for this criterion because our methodology for item development ensured that items *a priori* reflect options that were considered by the participating adolescents as generally acceptable and applicable.

5 The complete instrument (after psychometric quantitative evaluation) can be found in Vagos, et al., 2016, Appendix A.

out that, for some scenes, particularly overtly provocative ones, responses would most likely be dependent on context circumstances. Such circumstances had, accordingly, been previously found to impact on how female children evaluate relational provocation (Sumrall, Ray, & Tidwell, 2000). To account for this, the provocateur in every scene was referred to as “colleague” or “someone”, thus inducing more general responses that may characterize a social information processing profile. No further details on contextual cues were given, in trying to maintain the ambiguity of the scenes.

GENERAL DISCUSSION AND CONCLUSIONS

This work presents the process of development and evaluation of items intended to assess three steps of SIP (*i.e.*, attribution of intent, response evaluation, and response decision; Crick & Dodge, 1994; Fontaine & Dodge, 2006), in addition to emotional states (Lemerise & Arsenio, 2000). A participatory and ecologically valid approach was used for item development and evaluation (APA, 1999; Murphy & Davidshofer, 2001; Vogt King, & King, 2004), according to which adolescents themselves were considered experts on their SIP and freely discussed their habitual social experiences, and their thoughts, feelings, and behaviors when facing them. A minimal number of focus groups were conducted (Nassar-McMillan, Wyer, Oliver-Hoyo, & Ryder-Burge, 2010). Though analyses of full transcripts were not possible, detailed notes nevertheless indicated that data saturation was achieved. Items were hence operationalized following quotations representing thematic units derived from these group discussions. These thematic units, in turn, corresponded to *a priori* defined categories (*i.e.*, attribution of intent, emotional states, behavioral response options). The face validity, understandability, and pertinence of the items and their allocated response scales were then analyzed. Simultaneous evaluation of neutral and hostile attributions, of emotions other than anger, and of behavior options other than aggression provided by the SSIPA represents a novelty over existing measures, and is in line with the proposal of the SIP model being associated with diverse types of social behaviors (Crick & Dodge, 1994, 1996).

The SSIPA is an innovative assessment instrument developed using a participatory (APA, 1999) and rational perspective (Murphy & Davidshofer, 2001). It considers the social information processing (namely its cognitive and emotional intrapersonal processes and subsequent interpersonal behavior outputs) as it unfolds in the adolescents' mind. Evidence presented in the current paper reinforces the content validity of the instrument in relation to its targeted population in particular, which is mostly important if we consider that adolescents have been (biasedly) evaluated using items

built from the perspective of adults or children (Horowitz et al., 2003). Accordingly, the thematic units rendered from the current work were, for the most part, directly translated into the subscales of the SSIPA that have been established via exploratory factor analysis (i.e., neutral and hostile attribution of intent; experiencing anger, sadness, and shame; and choosing to act assertively, passively, overtly aggressively, and relationally aggressively). The diverse evaluation criteria that were put forward as distinct response scales converted, however, into a single measure of evaluation of each type of social behavior (Vagos et al., 2016). The history of the SSIPA so far seems to sustain the relevance of further studies using it, namely considering validity in relation to other variables and sensitivity to diverse populations.

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