

# Validation and Application of the French Version of the Aggressive Provocation Questionnaire: Gender and Age Differences in Aggression

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The Aggressive Provocation Questionnaire (APQ) (O'Connor, Archer, & Wu, 2001) was developed based on Frijda's modular theory of emotions (1988), in order to provide researchers with an effective measure of aggressive tendencies in men. The aim of the current paper is to 1) describe the development and validation of the French version of the APQ-12; and 2) for the first time, examine its psychometric properties in a female sample. Two samples of men and women (Study 1: N = 132, male = 54, female = 78; ages 17 - 24 years; Study 2: N = 302, male = 143, female = 159; ages 19 - 59 years) completed the APQ-12 in a French population. The first study concerned the internal consistency/convergent validity of the French version of the APQ, and also examined temporal stability of the measures. The second study investigated the effects of age and gender on aggressive tendencies. The psychometric properties from first study were then compared to those reported by O'Connor et al. (2001). The psychometric properties of the two scales were similar, and the scores on the APQ were also positively correlated with those on the AQ and the Trait-Anger Scales. The results also provided evidence for temporal stability of the French version of the APQ. However, the results from second study contradicted popular views about the effects of age and gender on aggressive tendencies. Analysis of the interaction of gender with age category indicated exceptionally high aggressive responses by young women (19 - 25 years old) and middle-aged men (26 - 44 years old).

*Keywords:* Aggressive Behavior; Anger; Scenario Measure; Gender; Age

## Introduction

More than half a century ago, the first comprehensive theory of human aggression was proposed (Dollard, Doob, Miller, Mowrer, & Sears, 1939). Since then, research on social behaviors have produced a wealth of important insights into aggressive behavior. Methodological improvements, including the introduction of meta-analytic techniques have increased our understanding of the important factors that influence the expression of aggressive behavior (e.g., age, gender, personality, and environmental stressors). Nevertheless, as abundant and interesting as the extensive research literature on aggression has become, existing meta-analyses indicate that problems remain relating to the definition of aggression and the generalizability of findings due to a lack of cross-sectional and cross-cultural studies (Archer, 2004).

## Overview

The main focus of the present article is 1) to describe the development and validation of the French version of a scenario-based measurement of aggression; and 2) to examine its psychometric and discriminant properties in adult samples of both sexes and of different ages. With this goal in mind and based on existing literature, we hypothesized that individuals' characteristics (e.g., gender and age) could influence their ag-

gressive tendencies. Specifically, we postulated that aggression would be more endorsed by men than by women. These differences would be more significant in the case of younger adults than in older ones. Further, we expected no differences in anger except for individuals with risky aggressive responses (e.g., direct aggression).

## Some Methodological Issues in Measuring Aggression

Over 200 definitions of aggression can be found in the psychological literature, most of them state two important features, 1) the behavior is intended to harm the target; and 2) the target perceives that s/he has been hurt. Researchers have often interpreted harm as physical injury. A considerable body of research on physical aggression has formed the basis for a developmental model of aggressive behavior (Bettencourt & Miller, 1996; Vaillancourt, 2005; Vaillancourt, Brendgen, Boivin, & Tremblay, 2003). Defining aggression as physical harm leaves out more subtle forms of hurtful behaviors that might be more frequent and significant especially among adults. The question about other forms of aggression remains important. For example, what are the origins of social aggression, and how do these behaviors continue to be expressed as children enter adolescence and adulthood, and how do they relate to social adjustment later on in life?

Furthermore, most research on aggression has involved

young adults, usually students (Archer, 2004). Yet, the behavior-observation context can have diverse meanings and be based on different structures, such as socio-cultural environment. The limitation regarding psychological analysis and aggression measurement cannot be overcome unless moving beyond the conceptual frameworks based on physical aggression and taking into account the effect of the larger socio-cultural environment, and its changes over time.

Considered as inherently dangerous and potentially damaging, directly measuring aggression is particularly difficult, and it would be inappropriate to encourage people to do real harm to others (Baron & Richardson, 1994). Therefore, researchers are under the obligation to ensure that no damage, physical or/and psychological, is caused to participants or to other living beings. In addition, being a negatively valued behavior, observing aggressive behavior is difficult because people refrain from aggression when they know they are observed (Coie & Dodge, 1998), even in the case of more subtle forms of hurtful behaviors (Crick & Grotpeter, 1995).

Nonetheless, researchers interested in studying human aggression have developed a wide variety of methods and techniques (Anderson & Bushman, 1998). At younger ages, the methods are principally observations, along with reports by peers, parents, or teachers. Adults are typically studied either by using laboratory methods or by means of questionnaires. For some researchers, only laboratory procedures provide precision about behavioral causality (for comprehensive reviews see Anderson et al., 1998; Baron & Richardson, 1994; Berkowitz, 1993; Lubek, 1995). Conversely, given their destructive consequences, some researchers consider self-report questionnaires to be the best way to study socially undesirable behaviors.

Traditional self-reporting methods provide a measure of a person's propensity to act aggressively (i.e., aggression in general or specific forms of aggression) in general events, which could be more or less familiar to an individual. Furthermore, traditional self-report methods do not provide precision about how the aggressive encounter is perceived and which dimensions individuals use to describe their everyday perception of the aggressive acts. Perception of aggressive behavior depends heavily on the context of its observation (e.g., Graham & Wells, 2001; Harris & Miller, 2000). In this matter, most studies based on self-report methods have examined aggression using a single action as the unit of observation, isolating the actions of aggressors from those of victims. This choice simplifies the analysis of the phenomenon and provides measures of the frequency and severity of aggressive actions. Nevertheless, using a single action as the unit of observation leaves out the eventual link between a *situational cause* preceding the aggressive act (i.e., provocation by the victim) and the *aggressive act itself* (i.e., aggression against that victim). On the contrary, an interaction involves an action performed by one party, which may or may not be perceived as a provocation by the other party. The reaction of the latter may be viewed as a provocation by the former dependent on behavior-observation context (e.g., same-sex or opposite-sex, in an intimate relationship or not). Thus, using interaction as the unit of observation or analysis reveals the complexity inherent to the aggressive behaviors. For example, the aggression of men against men is more socially accepted than is their aggression toward women. For women, the risk of facing male offenders is higher than that of facing fe-

male offenders. Nevertheless, men show higher aggressive tendencies toward women at work, whereas women perceive the risk of reacting aggressively toward their spouse as being lower than that of reacting similarly toward other men (Harris, et al., 2000; Winstok, 2006). Therefore, the social relationships we experience in everyday life are complex, particularly when they involve people with whom we do not always agree and whose needs could be incompatible with our own (Leander & Chartrand, 2011: p. 83). Managing such conflicting situations is a fundamental issue in regulation of aggressive behavior, leading to maladaptive forms of conflict resolution.

Thus, depending on the culture, physical setting, or characteristics of the protagonists, including their gender and age, the behavior-observation context can have different meanings. An understanding of the processes underlying, over time, the perception of an aggressive episode associated with conflict situations of everyday life (e.g., difficulties with work colleagues, problem in romantic relationships, or ineffective parenting), experienced by men and women either as a victim or as an offender, would be of practical and theoretical interest. As a matter of fact, in spite of consistent absence of gender or age differences in anger (e.g., see Archer, 2004; Averill, 1983; Frost & Averill, 1982; Fischer, Smith, Leonard, Fuqua, Campbell, & Masters, 1993; Suter, Byrne, Byrne, Howells, & Day, 2002) and emphasized high stability of aggression, differences in exhibited aggressive acts over time and between the two genders have been reported (Archer, 2004).

The type of aggressive acts seems to change dramatically over time, and the changes are not the same for each gender in terms of the onset of the behavior, its severity, choice of victim, etc. For example, if some degree of physical aggression is age-normative without marked disparity between young females and young males (about 1 - 2 years old) (Izard, Fantauzzo, Castle, Haynes, Rayias, & Putnam, 1995), gender differences in aggression become marked only in the early school years (about 3 - 6 years old; see Coie, et al., 1998). Over time, while males continue to display physical aggression, females use more verbal and indirect aggression (Crick, 1995). More severe, organized, and cross-gender aggression emerges in early adolescence, peaking in late adolescence (at ages about 14 - 15 years) and subsequently decreases with age (at ages about 16 - 17 years) (Farrington, 1986; Moffitt, 1993). However, the rate of aggression appears to peak and to drop slightly earlier for females than males (Moffitt, 1993). These findings are relatively consistent with evidence derived from several outstanding longitudinal and cross-sectional studies on child and juvenile aggression (see Loeber & Hay, 1997). On the other hand, in this matter, not all studies are in agreement, and sometimes the findings seem to be solely dependent on mode of measurement (Bettencourt & Miller, 1996; Pahlavan, 2004). In addition, relatively few studies address both gender- and age-typical aggressive manifestations in adults. For instance, in Archer's (2004) meta-analytic review of sex differences in aggression from real-world settings based on published articles from 1961 to 2000, there were only 41 self-report studies related to adult aggression compared to 153 studies reporting aggression in children and young adults. Moreover, there are relatively few studies on the various aspects of aggression that differentiate the characteristics of the aggressor and the victim (e.g. Archer & Haigh, 1997), and even fewer studies that have

examined such differentiations in different social contexts.

### Gender Differences in Displayed Aggression

In order to describe the variety of the aggressive acts committed by human beings and organize them into manageable categories, Buss (1966) proposed one of the first typologies of human aggression (giving the dimensions like *physical-verbal*, *direct-indirect*, and *active-passive or proactive/instrumental-reactive/hostile*). Since then, numerous reviews of gender differences in aggressive behavior have suggested that the two sexes differ in the types of aggressive behavior displayed, especially in terms of *physical-verbal*, and *direct-indirect aggression*.

Moreover, a careful examination of the vast literature on aggressive behavior reveals that the gender-related differences vary as a function of the methodology used to study them. These differences are not only related to the techniques used but also to the behavioral aspects observed. Another important point concerns the way in which aggression is measured (self/other evaluation, observations, or experimental studies). Different methodologies seem to systematically give rise to different magnitudes of gender differences (Bettencourt et al., 1997). The differences are typically larger on measures of displayed aggression and its consequences for the self or others. Therefore, although decades of research on aggression have produced important insights about gender-differences, the evidence seems to be far from conclusive. There is clearly a need for an alternative measurement, which could be used in a laboratory setting as well as real-world contexts. In other words, it would be worthwhile to devise an instrument enabling evaluation of more fundamental aspects of aggressive behaviors carried out by average people in their everyday life. One such method is known as the scenario based measurement of aggression.

### Scenario Based Measurement of Aggression

The scenario based self-reporting method was developed using Frijda's modular theory of emotions (Frijda, 1986, 1988). According to Frijda, emotions are subjective experiences of pleasure or pain resulting from appraisal processes of events (awareness of situational meaning structure) and associated with felt impulses to approach or avoid, or even an absence of desire to do anything (awareness of state of action readiness). As a result, emotions specifically basic emotions could be identified and defined in terms of a particular form of action readiness. Hence, there is an assumption related to an one by one relation between felt emotion and urged-action. For example, anger not only provides a sense of displeasure, but also the urge to do something in order to remove or harm its agent.

Based on these assumptions, Van Goozen, Frijda, Kindt, and Van de Poll (1994) devised a scenario type of measure to assess women's proneness to anger, the "Anger Situation Questionnaire" (ASQ). The ASQ has been developed to measure anger disposition (anger-proneness) in terms of "fiercely experienced emotion", "felt intensity" and "action readiness" in response to 33 anger-provoking vignettes or scenarios, whenever a respondent imagine being in each. Each scenario is considered to be a valid representation of a real-life situation, which when interpreted and labeled by a woman, might lead her to behave in a similar way as she would in real-life circumstances.

Following the same principle, Nisbett and Cohen (1996) devised a single scenario to assess aggressive dispositions among individuals who were insulted or not. O'Connor, Archer, and Wu (2001) also developed a scenario measure of male aggression, entitled the Aggressive Provocation Questionnaire (APQ). The APQ is proposed as an update to ASQ and as a state-based measure of the male aggressive behavior and its psychometrical qualities are as robust as those of a widely used self-report measure of aggression, the AQ (Buss & Perry, 1992). The APQ is mostly used to measure aggressive tendencies in function of psychological, physiological or social determinants of aggression (e.g. Calder, Keane, Lawrence, & Manes, 2004; Elgar, Waschbusch, Dadds, & Sigvaldason, 2007; O'Connor et al., 2004; Tremblay & Belchevski, 2004). The APQ is available in two formats: a 33 vignette and a 12 vignette versions. Similar to the ASQ, for each anger-provoking vignette, the respondents are asked to imagine being in described situations and to indicate how they would feel and react in each situation (see measures section for more details). The results of O'Connor, et al., (2001) study involving the development, piloting, and validation of a vignette-based assessment of the Aggressive Provocation Questionnaire (from a sample of 25 men aged 19 - 55 years) and those of study concerned the use of the finalized version of the Aggressive Provocation Questionnaire (from a sample of 130 men aged 17 - 54 years) showed that 1) the prior self-reported aggression (measured by the AQ) predicted responses to provoking scenarios (measured by APQ), and 2) the later questionnaire (APQ) has discriminant value in terms of age

The realness and concreteness of the anger-eliciting scenarios in the ASQ and APQ make them very different from traditional questionnaires, which ask people to rate how they behave in terms of general statements. In addition, this approach provides more information about the simultaneous affective-motivational and behavioral tendencies induced by the same concrete scenarios, in other words its intentionality. Analyzing behavioral intentionality leads to understanding *Why* and *How* does an individual behave in a certain way and not in some other way. Information about the *Why* and *How* aspects of aggressive behavior would enrich our understanding, because commonly held beliefs about aggression are highly related to the development of social competence and moral reasoning. In the case of the scenario based self-reporting method, scores on the anger-eliciting scenarios represent not only why, but also how upset a person believes s/he would be whenever experiencing a typical provocative situation and how s/he would react in such circumstance (see Pahlavan & Andreu, 2009). Above all, such measures allow assessment of person's self-reported disposition to act aggressively by providing suitable situational information (i.e. behavior-observation context) from which the participant can reasonably determine how s/he would respond (O'Connor et al., 2001).

Surprisingly, to date, neither the ASQ nor the APQ has been validated in both men and women. And, none of these measures have been adapted and validated for use in French populations. According to recent studies, culture may moderate many social psychological phenomena. Different cultures have different construals of social world (self/others) which could have profound impact on the nature of individuals' behavioral reactions. For instance, Nisbett and his colleague (Nisbett et al., 1996) have explored what they called the "culture of honor" of the American South and demonstrated marked differences in their behavioral reactions relative to those of their northern counter-

parts when confronted with insult. Subsequently, among other things, people are more or less susceptible to exhibit aggression depending on their age, gender, but also their culture.

These kinds of differences raise questions about generalizability of some findings, which could contribute to a distorted portrait of “human nature”. We currently know so little about the social psychological processes in different subsets of human beings, and considerably less about the way people think and behave in their real-world environments. Therefore, the central aim of the current study was to validate an existing scenario-based measure of aggression behavior in a sample of male and female of different ages representing the French adults. For practical reasons related to the constraints of field study, to avoid limited affective choice (one choice out of five) used in the ASQ and to reduce participant burden (33-item in the case of ASQ or APQ-33 version), the current study focused on adapting the 12-item version (APQ-12) for use with French samples.

## Method

Given the lack of a validated French-version scenario-based questionnaire, two studies were conducted. The first study was a replication of O'Connor and colleagues' study (O'Connor et al., 2001) designed to examine the psychometric properties of a French version of the APQ including its construct, its convergent validity, and to determine its test-retest reliability. However, given small size of the sample, the construct validity was assessed using only internal reliability. According to most authors (see John & Benet-Martinez, 2000; Judd, Jessor, & Donovan, 1986), the construct validity must be done using a confirmatory analysis in addition to internal reliability. Typically, confirmation of factor structure is done using structural equation modeling (SEM). Therefore, although our second study aimed to identify and explain the impact of gender and age of the participants on the APQ's scores, its data were used to verify factor structure of the APQ affective subscales. However, the sample size was not large enough allowing the use of a nested model.

## Study 1

### Method and Procedure

Two bilingual (French-English) graduate students independently translated the Aggressive Provocation Questionnaire (APQ) (O'Connor et al., 2001). Each version was then reviewed and compared with other version after being back-translated by the first author and a native English-Speaking specialist. The finalized French version of the APQ, with the French standardized versions of the Aggression Questionnaire (AQ) (Buss & Perry, 1992) and the Trait-Anger Scale (STAS-Anger scales; Spielberger, Jacobs, Russell, & Crane, 1983) were administered to 132 students twice with one month interval, in order to examine APQ's psychometric properties (internal reliability and convergent validity) as well as its test-retest reliability. For both test and retest sessions, the questionnaires were presented in following order: APQ, AQ, and STAS-T.

### Participants

For the first study, convenience sampling was used. One hundred and thirty two psychology students (male  $n = 54$ , female  $n = 78$ ) agreed to complete the questionnaires during class,

but did not do so as part of a course requirement. They were aged between 17 and 24 years ( $M = 19.75$ ,  $SD = 1.51$ ), and participated on a voluntary basis. However, only 60 students (male  $n = 24$ , female  $n = 36$ ) out of 132 agreed to complete the questionnaires for retest.

## Measures

The Aggressive Provocation Questionnaire APQ (O'Connor et al., 2001, APQ) is a scenario-based measure developed to assess aggressive tendencies in terms of experienced emotion and action readiness, in response to a set of hypothetical provocative situations. The participants were asked to imagine being in a series of situations (as shown in **Figure 1**) and to indicate 1) how s/he would feel in each situation (angry, frustrated, or irritated), measured on a 5-point intensity scale ranging from 0 (not at all) to 4 (extremely); and 2) how s/he would react to each situation by choosing one of five randomly-ordered action responses (avoidance, denial, distant anger, assertive behavior, or aggressive behavior). The action responses followed the categories outlined below:

- Avoiding the situation, denying that something is wrong, or transforming it into something positive.
- Doing nothing, although feel angry.
- Distant anger, indirect or delayed angry behavior.
- Assertive behavior, confronting the provoking person but without overt verbal or physical aggression.

Aggressive behavior, direct verbal or physical aggression.

O'Connor and colleagues (2001) regarded these categories as a part of a list of mutually exclusive, alternative action responses to provocative situations. Following the O'Connor et al. procedure, the participants' behavioral scores were calculated adding up the number of items checked for each behavioral choice, and dividing this sum by the total number of items (12 scenarios). Emotional scores were the sum scores across each of the 12 scenarios.

To test the convergent validity of the French version of APQ, we also distributed the French standardized versions of the Aggression Questionnaire (AQ) (developed by Buss & Perry,

2. Imagine yourself in the following situation:

You're out for a drink with your girlfriend or boyfriend. As you're ordering drinks at the bar, a stranger approaches your date and grabs him/her around the waist. Upon your return, your date tells you about his/her misadventure.

How are you feeling at this precise moment?

	Not at all	A little	Moderately	Somewhat	Extremely
Angry	0	1	2	3	4
Frustrated	0	1	2	3	4
Irritated	0	1	2	3	4

What do you think you would do in this situation?

1. I would leave and go to another bar [avoid].
2. I would do nothing [no response].
3. I would threaten the stranger and insult him/her [aggression].
4. I would tell the stranger that such behavior is unacceptable and out of bounds [assertive].
5. I would feel angry but would do nothing at the moment [anger].

**Figure 1.** Example item from the Aggressive Provocation Questionnaire (Scenario number 2).

1992 translated into French by Masse, 2001) and the Trait-Anger Scale (STAT-T) (developed by Spielberger et al., 1983; Borteyrou, Bruchon-Schweitzer, & Spielberger, 2008). These questionnaires are types of standardized personality scales most frequently used in research on aggression.

The French standardized version of the Aggression Questionnaire (AQ) consists of four subscales that are designed to measure dispositional anger (7 items, e.g., “I sometimes feel like a powder keg ready to explode”), hostility (5 items, e.g., “I hate them”), verbal (8 items, e.g., “When I get mad, I say nasty things”), and physical (9 items, e.g., “If somebody hits me first, I let him have it”) aggression. For each item, the respondent is asked to indicate on a 5-point Likert scale from “never” to “always” how often he or she tends to behave in a hostile-aggressive manner. Different researchers have provided information about the validity and reliability of the AQ, and its factorial structure (e.g., Bond, Lader, & Da Silveira, 1997; Masse, 2001). The Cronbach’s alpha estimates of internal consistency of the standardized version of the Aggression Questionnaire (AQ) range from .68 to .82 (e.g. O’Connor et al., 2001; Masse, 2001).

The Trait-Anger Scale (STAS-T) is a widely used measure and consists of 15 items such as “I am angry” that are designed to measure how often he or she tends to become angry. For each item, the respondent is asked to indicate on a 4-point Likert scale from “never” to “always”. High scores on these scales indicate the person being more likely to perceive a wide range of situations as anger producing, and respond to such situations with elevations in transient anger levels. The Cron-

bach’s alpha estimates of internal consistency of the standardized version of the Trait-Anger Scale range from .81 to .94 (e.g., Borteyrou et al., 2008; Spielberger et al., 1983).

## Results

The missing data (about 3%) were replaced by participants’ average scores for each variable. In order to verify the general characteristics of the data set, the score distributions were checked and tested for variance homogeneity. Since the test detected an unequal variance on aggressive reactions [Bartlett  $\chi^2$  test:  $F(9) = 59.34, p < .000$ ] the behavioral scores were changed into square roots.

### Internal Reliability and Convergent Validity

For the APQ’s three Emotional Subscales, as shown in **Tables 1** and **2**, internal reliability (Cronbach’s alphas) was high, and also in line with the reliability data provided by O’Connor and his colleagues (anger = .94, frustration = .93 and irritation = .89), specifically for females participants. Cronbach’s alpha for the AQ scores and the Trait-Anger Scale were high, too. For both sexes, inter-correlations for the APQ-emotional (anger, irritation) subscales and the AQ (physical aggression, anger, hostility) as well as STAS-Trait scores were positively correlated. Therefore, internal reliability and the convergent validity of the APQ-emotional subscales are acceptable and in the predicted direction.

**Table 1.**

Observed alpha coefficients and inter-correlations for the APQ subscales, AQ subscales, and the trait-anger scale for male participants (n = 54).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1-Age	1.00	-.07	-.08	-.05	.02	.24	.20	-.15	-.06	.21	.07	.27	.18	.19
APQ														
2-Anger		(.54)	.46	.25	-.14	-.22	-.03	-.07	.30	.37	.23	.28	.04	.43
3-Frustration			(.86)	.36	.10	-.04	.29	-.13	-.03	.12	.35	.24	-.01	.39
4-Irritation				(.88)	-.11	-.21	-.03	.02	.17	.24	-.06	.05	.01	.33
5-Avoidance					1.00	.39	.08	-.48	-.25	-.17	-.07	-.27	-.39	-.17
6-Denial						1.00	.12	-.45	-.26	-.02	.09	-.01	.01	-.05
7-Distant-anger							1.00	-.38	-.18	-.03	.16	.32	.05	.25
8-Assertive reaction								1.00	-.51	-.38	.07	-.25	-.13	-.22
9-Aggression reaction									1.00	.57	-.18	.30	.37	.27
AQ														
10-Physical										(.76)	-.25	.61	.28	.44
11-Hostility											(.71)	.18	.02	.20
12-Anger												(.76)	.34	.71
13-Verbal													(.45)	.30
14-Trait-anger														(.76)

Note: Correlations in boldface are significant at  $p < .05$ . The numbers in brackets are the Cronbach’ alpha for the APQ’s affective subscales.

**Table 2.** Observed alpha coefficients and inter-correlations for the APQ subscales, AQ subscales, and the trait-anger scale for female participants (n = 78).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1-Age	1.00	-.23	-.19	-.05	.25	.00	-.07	-.16	.03	.02	-.18	-.05	.09	-.09
APQ														
2-Anger		<b>(.83)</b>	.56	.69	-.27	-.20	.14	.09	.20	.27	.33	.22	.03	.22
3-Frustration			<b>(.89)</b>	.56	.07	-.10	.26	-.06	-.10	.16	.27	.19	.09	.25
4-Irritation				<b>(.89)</b>	-.15	-.12	.19	-.01	.12	.15	.27	.25	.02	.32
5-Avoidance					1.00	.09	.07	-.49	-.41	-.31	-.03	-.20	-.26	-.19
6-Denial						1.00	.18	-.52	-.40	-.43	.08	-.03	-.20	-.13
7-Distant-anger							1.00	-.53	-.28	-.22	.22	.05	-.17	-.01
8-Assertive reaction								1.00	-.02	.31	-.13	-.02	.26	.01
9-Aggression reaction									1.00	.42	-.04	.20	.20	.29
AQ														
10-Physical										<b>(.83)</b>	.35	.48	.46	.56
11-Hostility											<b>(.77)</b>	.62	.25	.49
12-Anger												<b>(.78)</b>	.37	.65
13-Verbal													<b>(.64)</b>	.38
14-Trait-anger														<b>(.81)</b>

Note: Correlations in boldface are significant at  $p < .05$ . The numbers in brackets are the Cronbach's alpha for the APQ's affective subscales.

For the APQ's Behavioral Responses, the results showed for males as well as females participants that the APQ-emotional subscales measures were positively correlated with the APQ's measure of aggressive reaction, except for frustration, which was positively correlated with denial reactions. However, for both sexes the APQ-anger subscale was negatively correlated with the measures of avoidance and denial. In addition, the APQ's measures of aggressive and assertive reactions were significantly and negatively correlated with the other three reactions, in female as well as in male participants. Nevertheless, aggressive reaction and assertive reaction were significantly and negatively correlated, only for male participants. For all participants, the AQ's physical aggression, verbal aggression, anger subscales and Trait-Anger Scale were significantly and positively correlated with the APQ's measures of aggressive choices. However, while for male participants those scores were negatively correlated with assertive reactions, for females these reactions were positively correlated with the AQ's physical as well as verbal aggression scores.

In line with O'Connor et al. (2001) our data for male participants showed that the aggressive and assertive action scales were negatively correlated ( $r = -.51$ ,  $p < .05$ ), suggesting that these are alternative response tendencies used by men facing provocative real-life situations. The results in female participants were relatively similar to those found for their male counterparts, except for the APQ's measure of assertive reactions which were positively and significantly correlated with the AQ's physical and verbal aggression scores. In addition,

analyses of variance of the scores revealed significant gender effects only for the AQ's physical and verbal aggressions scores as well as for the APQ's measure of aggressive responses, in direction of male participants (see Table 3).

### Temporal Stability: Test-Retest Reliability

As mentioned earlier, the data from first study were as well used to examine the temporal stability of the APQ. Overall test-retest reliability, as an index of temporal stability was high, suggesting that the participants' responses (n = 60) to the questionnaires were stable over this brief period of time (a month; see Table 3).

Overall, the results of our first study showed that psychometrical qualities (internal reliability and convergent validity) of the French version of the APQ were generally high and acceptable. Its test-retest reliability was also high. Thus, data from our first study supported our preparatory work and provided convincing evidence that the French version of the APQ could be used in French populations.

## Study 2

### Method and Procedure

The principal objective of our second study was to reassess and extend the results of our first study in a large sample of general population. Given constraints of field study, in second study we used only the French versions of the APQ and the

**Table 3.**  
Alpha coefficients, observed means, and standard deviations for trait-anger, AQ, and APQ scales (N = 132).

Scale	Alpha coefficient			Analyses of variance			Mean (SD)	Mean (SD)	p
	Males			Females					
	Test	By half	Retest	Test	By half	Retest			
Trait-anger	.76	.67	.56	.81	.66	.73	2.25 (.44)	2.16 (.45)	ns
AQ scales:									
Physical aggression	.76	.73	.70	.83	.81	.79	2.93 (.73)	2.24 (.75)	<.00
Hostility	.71	.67	.81	.77	.65	.79	3.01 (.72)	2.96 (.71)	ns
Anger	.76	.72	.72	.78	.83	.77	2.90 (.78)	2.69 (.76)	ns
Verbal aggression	.45	.30	.83	.64	.44	.63	3.05 (.65)	2.76 (.69)	<.01
APQ emotional subscales									
Anger	.54	.63	.72	.83	.86	.81	2.84 (.42)	2.89 (.65)	ns
Frustration	.86	.79	.91	.89	.88	.86	2.23 (.82)	2.09 (.87)	ns
Irritation	.88	.87	.73	.89	.88	.88	2.76 (.82)	2.73 (.81)	ns
APQ behavioral subscales									
Avoidance			.57			.67	.128 (.10)	.162 (.11)	ns
Denial			.22			.54	.102 (.84)	.119 (.10)	ns
Distant-anger			.75			.67	.091 (.09)	.096 (.09)	ns
Assertive reaction			.76			.67	.470 (.20)	.527 (.16)	ns
Aggressive reaction			.77			.74	.209 (.16)	.097 (.12)	<.00

Note: The reliability of action-readiness labeling cannot be calculated, since this is basically a nominal scale. The significance levels on the t-tests between the means of the male and female respondents are presented. ns = non-significant.

STAS-T. After having read and signed the first part of an informed consent form participants completed questionnaires measuring aggressive tendencies (APQ and STAS-T). At the end they signed the second part of an informed consent form before being thoroughly debriefed and thanked.

### Participants

For second study, 302 (male n = 143, female n = 159) participants were recruited from the general population, via word-of-mouth. To ensure the generalizability of the data, we conducted this study in the natural environment of faculties (35%) and workplaces (36% private, 29% public services), and enrolled participants who were employed as well recruited college students. Participants were prospectively approached and asked if they were willing to take part in a research study examining individuals' perception and reactions to conflict situations in everyday life. Those who volunteered (about 85% of approached persons) were asked to complete a standard question-

naire after having given informed consent. Participants were also asked to provide demographic details (age, gender, occupation, speaking language). The mean age for the total sample was 35.30 years ( $SD = 11.52$  years) and the age range was 19 - 59 years.

### Results

After replacing the missing data (about 3% - 5%) by participants' average scores for each measure, we checked the distribution of the data and tested for variance heterogeneity. Except for aggressive reactions [Bartlett  $c^2$  test:  $F(9) = 30.53, p < .00$ ], the data were normally distributed. Therefore, the behavioral scores were transformed into square roots.

### Exploratory and Confirmatory Factor Analyses

In their study, O'Connor et al. (2001) did not examine factor structure of the original APQ-12. However, based on Frijda's

theory (1986, 1988) we had a predicted theoretical model consisting of three “unobserved” emotions (anger, frustration and irritation), which were each predicted by twelve observed variables (i.e., responses to scenarios) and a fourth unobserved variable, action responses, that could also be predicted by responses to the twelve scenarios. The confirmatory factor analysis would then indicate how closely the data fit our hypothetical model. Therefore, we also used structural modeling in order to test the construct validity of the APQ. We hypothesized that the APQ items have three underlying affective constructs (anger, frustration, and irritation), and are also related to observed variables, action responses, which could be predicted by those items. Regarding affective scores, exploratory factor analysis resulted in eigenvalues (9.35, 2.77, and 2.29) showing clearly a first strong unrotated factor responsible for 26% of the variance in the data (with 7% and 6% for second and third factors). Rotated solution (Normalized Varimax rotation) provided a three factor structure (eigenvalues: 5.32, 5.72, and 3.86; variance: 15%, 15%, and 10%). The results of exploratory factor analyses made it hard to tell conclusively if we had one or more factors. Consequently, we use structural modeling to examine the factorial structure of the APQ.

First, because of unequal variance observed on aggressive responses, we used the parceling method (the average of two or more items) to model our data (see Little, Cunningham, & Shahar, 2002; Little, Lindenberger, & Nesselroade, 1999). Based on the specificity of the context (personal, professional, and non-specific contents) of conflict, three indicators were selected out based on the APQ’s twelve provocative situations. The first parcel or facet represented situations (scenarios number 2, 7, 8, and 12) in which provocation was inflicted in personal grounds (embarrassment in front of boy/girlfriend, infidelity, etc.). The second facet was related to professional provocative situations (scenarios number 1, 4, 5, and 9; embarrassed by his/her boss, on the way to a job interview, etc.). The third facet represented non-specific contexts (scenarios number 3, 6, 10, and 11, driving down a street or motorway, looking for parking, etc.). Then, the hypothesis about underlying structure of construct variables (anger, frustration, irritation, and action responses) was tested at aggregate-levels. Lambda was fixed to 1 for the first observed indicator of each latent variable and all error weights; all other parameters were freely estimated.

Given the ambiguity of rotated and unrotated solutions revealed by our exploratory factor analysis, we examined two CFA models: a first-order model, and then a second-order one. The first-order model hypothesized a factorial structure according to which responses to the APQ could be explained by three factors, each facet would have a nonzero loading on the APQ factor it was designed to measure. Three factors being highly correlated, for our second-order model we hypothesized a hierarchical factorial structure according to which covariation among the three first-order factors (anger, frustration, and irritation) would be explained by their regression on a second-order factor, so called negative emotions.

Significant  $\chi^2$  values resulting from our first-order and second order models [ $\chi^2(25) = 53.71, p = .001$ ; [ $\chi^2(25) = 67.89, p = .001$ ] suggested that the fit of data to the hypothesized models is not entirely adequate. However, given  $\chi^2$  limitations (i.e., sensitivity to sample size, its centroid distribution; for details see Byrne, 2001) we examined other indexes of the goodness-of-fit which showed a relatively good fit with the data for our first-order model (RMR = .025, RMSEA = .075, CFI = .979,

NFI = .967, GFI = .964) compared with our second-order model (RMR = .037, RMSEA = .089, CFI = .967, NFI = .955, GFI = .956).

In addition, we examined the three-factor model on the data from our first study ( $N = 132$ , 54 males, 78 females). The results indicated again significant value for  $\chi^2$  [ $\chi^2(20) = 42.37, p = .01$ ]. However, in spite of small sample size, the indexes of goodness-of-fit were acceptable (RMR = .035, RMSEA = .092, CFI = .970, NFI = .947, GFI = .938). In essence, this replication constituted the first and more appropriate confirmatory test of a three-factor model for APQ’s factorial structure.

Thus, for testing our hypothesis based on predictive value of the affective dimensions of the APQ on action responses, we used our three-factor model. The resulting  $\chi^2$  statistic indicated again significant value [ $\chi^2(75) = 169.50, p = .001$ ], but other indexes of the goodness-of-fit showed good fit with our data (RMR = .063, RMSEA = .065, CFI = .948, NFI = .0912, GFI = .932).

As shown in **Figure 2**, there was a unique contribution of anger explaining aggressive choices. As a matter of fact, whereas anger explained, a large part of variance of aggressive tendencies ( $\beta = .81$ ), it had no predictive value regarding assertive tendencies ( $\beta = -.03$ ). In addition, there was no such effect for any of the other affective reactions

### Internal Reliability and Convergent Validity

Overall, internal reliability and convergent validity analyses of the data showed the same effects and tendencies found for our first study (see **Tables 4 and 5**).

For the APQ’s three Emotional Subscales, internal reliability analyses of the data showed again that their Cronbach’s alphas were high and within acceptable boundaries (i.e.,  $>.70$ ; see **Tables 4 and 5**). Broadly speaking, they were the same for women (anger = .79, frustration = .89, and irritation = .88) and men (anger = .79, frustration = .87, and irritation = .84), and also in line with the reliability data provided by O’Connor and his colleagues (anger = 0.94, frustration = 0.93 and irritation = 0.89) and those from our first study. For all participants, the APQ-emotional subscales were as well positively and significantly correlated with the scores on the Trait-Anger Scale.

For the APQ’s Behavioral Responses, the results also showed that the APQ’s measure of aggressive reaction was significantly and positively correlated with the APQ-emotional subscales measures and the Trait-Anger scores, but negatively with assertive reactions. This pattern of results was found in both men and women.

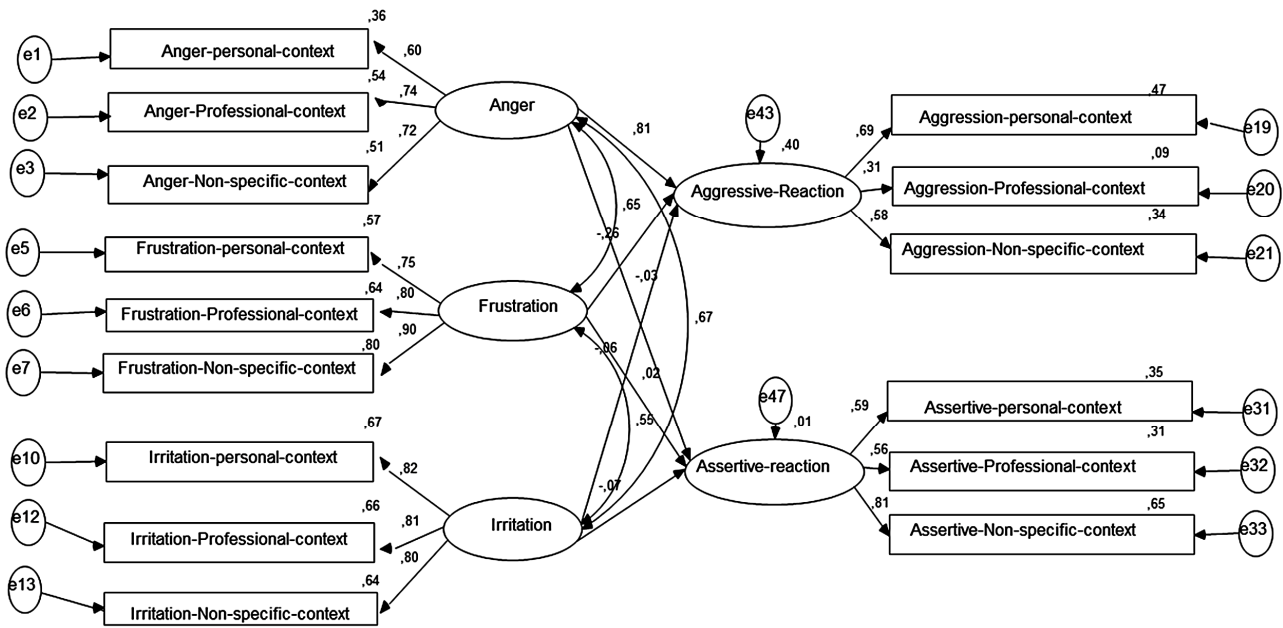
Age was negatively correlated with the frustration score, the frequency of denial and the aggressive behavioral choices, whereas, it was positively correlated with assertive behavioral reactions. However, analyses showed that these correlations were significant only for women (see **Table 5**). For men, only correlation between age and denial responses was significant (see **Table 4**).

Consistent with other studies (Archer, 2000; O’Connor et al., 2001), the correlation between age and affective scores (anger, frustration, and irritation) was negative, although only significantly for frustration in female participants.

### Age and Gender Effects on APQ Scores

In order to investigate the impact of gender and age on APQ





**Figure 2.** Model of causal structure related to participants aggressive tendencies as measured by the APQ, illustrating anger as an affect directly related to aggressive tendencies.

**Table 4.** Correlations between subscales of the APQ, and the trait-anger scale for male participants (n = 143).

	1	2	3	4	5	6	7	8	9	10
1-Age	1.00	.04	-.05	-.04	.06	-.17	.08	.03	-.02	.01
2-Anger		<b>(.79)</b>	.54	.64	-.15	-.06	.08	-.16	.41	.38
3-Frustration			<b>(.87)</b>	.45	-.13	-.07	.01	-.06	.26	.26
4-Irritation				<b>(.84)</b>	-.23	-.11	.05	-.04	.35	.24
5-Avoidance					1.00	.33	-.03	-.57	-.28	-.26
6-Denial						1.00	.05	-.61	-.11	-.06
7-Distant-anger							1.00	-.39	-.01	-.07
8-Assertive reaction								1.00	-.38	-.05
9-Aggressive reaction									1.00	.43
10-Trait-anger scale										<b>(.79)</b>

Note: Correlations shown in boldface are significant at  $p < .05$ , Numbers in brackets are the Cronbach' alpha for the APQ's affective subscales.

scores, the sample was split at the first (25 % of participants aged less than 25 years), second (50% of participants aged more/less than 33 years), and third (25% of participants aged more than 45 years) quartiles of participants' age. Specifically, the participants were stratified into three age categories (Women: age 19 - 25,  $M = 22.03$  years,  $SD = 1.96$ ; age 26 - 44,  $M = 33.95$  years,  $SD = 5.74$ ; age 45 - 59,  $M = 51.18$  years,  $SD = 3.82$ ; Men: age 19 - 25,  $M = 23.02$  years,  $SD = 1.76$ ; age 26 - 44,  $M = 33.66$  years,  $SD = 6.35$ ; age 45 - 59,  $M = 52.80$  years,  $SD = 3.50$ ). There was no a priori hypothesis about these age categories. However, there were some intuitive hypotheses regarding the peak years of competitive pressures inherent to professional and personal life (Archer, 2004). We emphasized

that the pattern of pressures of professional and personal life was bimodal, with the highest level of pressures for both sexes aged between 25 and 45 years.

A 2 (gender)  $\times$  3 (age) multivariate analysis of variance (MANOVA) revealed significant main effects of gender,  $F(8, 289) = 2.21, p < .03, \eta = .94$ , and age,  $F(16, 578) = 3.76, p < .000, \lambda = .82$  and a gender  $\times$  age interaction,  $F(16, 578) = 1.99, p < .02, \lambda = .90$ .

For affective responses univariate analyses showed no significant effects. For follow-up analyses we used some contrast statements specifying those related to a gender  $\times$  age interaction in which we were interested. The analyses showed only a significant difference for scores on anger between the youngest

females and middle-aged males in direction of the females,  $F(1, 133) = 6.05, p < .02, \eta^2 = .46$  (see **Table 6**).

Univariate analyses for behavioral choices revealed that the gender  $\times$  age interaction effects were significant only for aggressive action,  $F(2, 296) = 4.47; p < .02; \eta^2 = .25$ , and assertive responses,  $F(2, 296) = 3.87; p < .03; \eta^2 = .23$ .

The pattern of the data showed the most frequent aggressive choices for the youngest women and middle-aged men (see **Table 6**). Yet, aggressive choices were lowest among the middle-aged women and the youngest men. The frequency of ag-

gressive choices was somewhat higher for older men than for older women. For assertive choices, the opposite tendency was found for younger participants, with more assertive choices in direction of the men. Practically the same assertive-choice rate was found for older and middle-aged men and women, with higher frequencies for the older participants. direction of the men. Practically the same assertive-choice rate was found for older and middle-aged men and women, with higher frequencies for the older participants.

A 2 (gender)  $\times$  3 (age)  $\times$  3 (context) analysis of variance

**Table 5.** Correlations between subscales of the APQ, and the trait-anger scale for female participants (n = 159).

	1	2	3	4	5	6	7	8	9	10
1-Age	1.00	-.12	-.19	-.15	.06	-.22	-.05	.21	-.25	-.09
2-Anger		<b>.79</b>	.43	.43	-.20	-.19	.19	.06	.18	.31
3-Frustration			<b>.89</b>	.53	-.02	-.00	.09	-.09	.17	.27
4-Irritation				<b>.88</b>	-.04	-.02	.08	-.10	.24	.23
5-Avoidance					1.00	.11	-.16	-.55	-.03	-.18
6-Denial						1.00	.04	-.63	.01	.10
7-Distant-anger							1.00	-.36	-.00	.09
8-Assertive reaction								1.00	-.42	-.07
9-Aggressive reaction									1.00	.19
10-Trait-anger scale										<b>.70</b>

Note: Correlations shown in boldface are significant at  $p < .05$ , Numbers in brackets are the Cronbach' alpha for the APQ's affective subscales.

**Table 6.** Mean emotional and behavioral scores and standard deviations, by participant gender and age group (N = 302).

Groups	Anger frustration	irritation	Avoidance	Denial	Distant-anger	Assertive reaction	Aggressive reaction
Female subjects							
Age 19 - 25 (n = 42)							
M	32.41a	24.24a	34.74a	.228a	.195ab	.113ab	.318abc
SD	7.04	10.93	6.85	.124	.123	.111	.206
Age 26 - 44 (n = 79)							
M	29.66	22.17	29.68a	.202b	.143bcd	.070b	.522bc
SD	8.19	10.73	10.72	.112	0.106	.077	.187
Age 45 - 59 (n = 38)							
M	30.65	18.78a	32.08	.248c	.113de	.097a	.465c
SD	9.27	13.01	10.76	.134	.108	.089	.189
Male subjects							
Age 19 - 25 (n = 35)							
M	28.97	22.20	31.68	.202	.172efg	.043a	.465a
SD	8.55	10.22	7.05	.137	.101	.062	.219
Age 26 - 44 (n = 73)							
M	29.01a	21.28	31.74	.156abcd	.097acf	.087a	.528b
SD	7.19	10.62	8.75	.123	.108	.091	.227
Age 45 - 59 (n=35)							
M	30.38	20.18	30.82	.236d	.115g	.088a	.438b
SD	9.14	11.77	10.18	.147	.092	.104	.230

Note: Means in the same column that share subscripts differ at  $p < .05$  in post-hoc analyses.

taking into account the APQ's contextual specificity (personal, professional, and non-specific) revealed a significant three-way interaction. Analyses by context showed for the non-specific context scenarios significant age by gender interaction effects for aggressive,  $F(2, 296) = 3.90, p < .03, \eta^2 = .26$ , and assertive choices,  $F(2, 296) = 3.11, p < .05, \eta^2 = .21$ . The highest aggressive choices were found for youngest females and older males participants (Females:  $M = .060$  vs  $M = .025$  vs  $M = .040$ ; Males:  $M = 0.036$  vs  $M = .096$  vs  $M = .122$ ). For assertive choices, the highest frequencies were found for older females and middle-age males participants (Females:  $M = .405$  vs  $M = .544$  vs  $M = .559$ ; Males:  $M = .529$  vs  $M = .586$  vs  $M = .436$ ). In the case of professional context, the same interaction effect was found for aggressive choices only,  $F(2, 296) = 3.33, p < .04, \eta^2 = .22$ , with most frequent aggressive choices for younger participants, in direction of the females (Females:  $M = .197$  vs  $M = .048$  vs  $M = 0.086$ ; Males:  $M = .129$  vs  $M = .103$  vs  $M = .114$ ). There was no such significant effect for personal context.

Univariate ANOVAs also showed that a main effect of age was accounted for by differences between the groups on the APQ action responses scores only. Specifically, significant effects for age were found for avoidance,  $F(2, 296) = 6.52, p < .002, \eta^2 = .30$ , denying,  $F(2, 296) = 10.52, p < .000, \eta^2 = .38$ , and assertive reactions,  $F(2, 296) = 10.90, p < .000, \eta^2 = .38$ . Older participants were more likely to avoid provocative situations compared to their younger counterparts ( $M = .215$  vs  $M = .179$  vs  $M = .242$ ). For middle-aged participants the most frequent choice was assertive ( $M = .391$  vs  $M = .525$  vs  $M = 0.451$ ), whereas for younger participants it was rather denying ( $M = .183$  vs  $M = .120$  vs  $M = .113$ ) responses.

Furthermore, a main effect of gender revealed and explained by differences between males and females on the APQ aggressive action response score only,  $F(1,296) = 3.94; p < .05; \eta^2 = .24$ , with more aggressive action responses in direction of the male participants ( $M = .125$  vs  $M = .097$ ).

## Discussion

The principal aim of the present research was to examine the reliability and, for the first time, assess the possibility of extending the use of a French version of the APQ-12 to female participants. The results showed that the French APQ is comparable to the English version in terms of its psychometric qualities and temporal stability for men as well as for women. As shown in **Table 7**, analysis of the inter-correlations between the APQ's emotional and behavioral scores for French male participants were closed to those observed by O'Connor et al. (2001), except for assertive reactions. While for French sample, assertive choices were negatively correlated with emotional responses, for English sample those correlations were rather positives except for frustration subscale. On a more interesting matter, the comparison between two samples revealed significant differences for all measures except for aggressive choices; male French participants seemed to be as aggressive as their English counterparts.

In summary, the results of these studies comparing men and women of different ages showed that 1) there were positive correlations between negative affective responses and aggressive choices in both men and women facing provocative situations; 2) the correlations between aggressive and assertive actions were negative; 3) age was negatively correlated with frustration and denial responses, and positively correlated with assertive choices, especially in women; 4) the feeling of anger was a better predictor of aggression, in both women and men, and 5) traditional gender-related moderation of aggressive tendencies was not found for young men and women.

Part of our results confirmed traditional gender-related mediation of aggressive tendencies, reflecting the absence of gender differences for anger, and its presence for aggressive responses, in the direction of the males. However, the analyses of our data showed that this influence varies depending on other variables, such as age and behavior-observation context. Actu-

**Table 7.**

Comparison between data from the second study (male participants aged 19-59 years) and those from O'Connor et al. (2001)'s third study (male participants aged 19 - 54 years).

Alpha coefficient	Analyse of variance									
	O'Connor's study 3/						Present study 2 (n = 143)			
Present study 2	1	2	3	4	5	6	Mean (SD)	Mean (SD)	t	p
1-Age		.04	-.05	-.04	.03	-.02	28.80 (7.88)	35.30 (11.52)	5.47	<.001
2-Anger	.03		.54	.64	-.16	.41	37.35 (14.90)	29.34 (8.01)	6.79	<.001
3-Frustration	-.08	.70		.45	-.06	.26	37.36 (15.98)	21.24 (10.76)	9.65	<.001
4-Irritation	-.08	.65	.83		-.04	.35	47.26 (16.14)	31.5 (8.71)	9.91	<.001
5-Assertive										
Reaction	.23	.03	-.02	.14		-.38	12.20 (3.37)	5.86 (2.76)	16.92	<.001
6-Aggressive										
Reaction	.05	.48	.30	.41	-.12		1.13 (1.72)	1.53 (1.68)	1.93	ns

Note: Correlations shown in boldface are significant at  $p < .05$ .

ally, the analyses of the data for youngest participants (19 - 25 years) revealed critical differences between females and males on anger and aggression scores, in direction of the females. This is indirectly consistent with findings that the rate of aggression is maximal during the peak years of sexual activity (Archer, 2004) and it drops slightly earlier for females than males (Moffitt, 1993). Nevertheless, note that the APQ is a scenario-based instrument that assesses the expression of individuals' beliefs about a standard set of provoking situations, rather than measuring people's real expression of anger and aggression. These hypothetical responses, may therefore differ from those that would be given in reality, for several reasons, including the relative absence of provoking situations in individuals' personal lives and the inhibition of risky aggressive responses when the cost-to-benefit ratio is high (Björkqvist, 1994).

Thus, we can speculate that the hypothetical nature of the responses could explain why young women in our samples had a higher score on proneness to anger and aggressive action. This would also match with the Bettencourt and Miller's idea that when verbal or written aggression is involved, gender differences decrease (Bettencourt et al., 1996), even turn in the female direction (Björkqvist, 1994). Does this suggest that women are more inhibited about aggressive reactions? Looking at our results, this does not appear to be the case. Indeed, although in our sample, women expressed more anger, only the youngest ones were more aggressive than men, specifically in the professional context. This raises the issue of within-gender variation and means that gender differences are partial and dependent upon the individuals as well as situational characteristics.

The results reported here led to the identification of more extreme groups of men and women, and shed some light on the merits of the text-evoked imagery methodology for the empirical investigation of aggression. In our opinion, optimal emotional and behavioral disposition evaluations should be based on empirical as well as theoretical viewpoints that attempt to carve individuals' dispositions along the lines of beliefs that generate the relevant psychological characteristics. The scenario-based self-report methods such as the ASQ or APQ could be taken as the early examples of test constructions based on psychologically relevant beliefs related to aggressive tendencies. Founded on an integrative theoretical view taking into account flexibility and context-dependent outcomes of social processes, these approaches represent coherent ways to proceed. Both are based on an anger-readiness causal pathway using social interaction as the unit of analysis. A scenario-based evaluation tool could have clear benefits in future psychological research. Indeed, for many human psychological research questions, it might be desirable to characterize the dispositional tendencies of participating individuals, in terms of intentionality. For instance, it is possible that some experimental and situational contexts have more specific impact in individuals with certain dispositional tendencies than in others. Many other possibilities could be envisioned, but to evaluate such possibilities, a straightforward psychometric tool is needed. In this work we followed the lead of O'Connor et al. (2001) whose APQ, which evaluated the emotional dimensions (anger, frustration and irritation) as well as their related behavioral reactions (avoidance, denial, distant anger, assertive and aggressive behaviors), provided a simple scenario-based self-report evaluation tool, for men. Nevertheless, in the construction of the French version of

the APQ we also attempted to evaluate these tendencies in women.

O'Connor et al. (2001) results have now been shown to be reliable in both men and women. Obviously this consistent finding has to be established regarding its factorial structure. The question is that either the three-dimensional emotional structure is enough to explain affective reactions to conflict situations of the everyday life, with an anger-aggression causal path, or other emotional dimensions such as fear, sadness or anxiety are needed to complete the affective sphere of beliefs related to aggressive tendencies. Our view is that the latter proposition is much more likely, even though this important issue cannot be resolved from the present data set. We did not focus on experience of these emotions, although the existing literature supports this point of view. For instance, Campbell (1999) suggested that women more easily experience fear in potentially provocative situations and that this inhibits their direct aggression. For Campbell (2006), the likelihood of aggression in a provocation context depends on the relative strengths of the person's anger and fear. Accordingly, while men and women do not differ in the frequency or intensity of their anger (Archer, 2004), they may differ in frequency and intensity of fear and fearful behavior. In their review of experimental studies, Eagly and Steffen (1986) noticed that women report more guilt and anxiety than men do as a consequence of aggression. Among children and adults, researchers have generally concluded that females experience fear more intensely and more frequently than males (e.g., Côté, Nagin, Vitaro, Brendgen, & Tremblay, 2002). Hence, faced with the same highly provocative situation, the enhancement of aggression in females might stem from their increased level of anger as well as their decreased level of fear. Therefore, age and gender affective and behavioral differences need to be more fully explored. Surely much can be learned from tracking developmentally such emotional dimensions and looking for additional gender differences as well as fluctuations of these tendencies in terms of sociocultural changes over time (see Pahlavan et al., 2009).

Overall, we think that our data suggest that the APQ represents a straightforward psychometric tool which could provide useful insights for underlying *Why* and *How* people think about their aggressive behavior. However, while the individual level of analysis concerns factors that are important precursors to understanding the dispositional patterns of male and female aggression, the situational or contextual level (insult, personal failure, and so on) focuses on the correlates of these patterns. Furthermore, while each of these areas might contribute differentially to the subsequent rates of female and male aggression, their interaction would be critical for understanding the correlates of aggression involving women and men. Hence, further research should examine aggressive tendencies, including via experimental manipulation task, in order to verify the contextual sensitivity of the APQ as a scenario instrument involving text-evoked imagery.

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