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**Gravity, Punishment and Justice:
a clustering analysis on teenagers' judgments of an antisocial act**

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Abstract

The aim of the study was to identify different positions regarding the way in which 423 teenagers of secondary schools, including 215 young pupils ($M_{age} = 12.5$, $SD = 1.5$) and 208 older pupils ($M_{age} = 16.5$, $SD = 1.5$), integrated four informational cues (the level of antisocial behaviour, the consequences for the classroom, the apologies and the teacher's attitude) for judging the degree of gravity of an antisocial act during a tournament organized during a sports lesson. Thus, this mapping was then explored in punishment and justice judgements. The participants gave their judgments on gravity, punishment, and justice in 32 scenarios constructed from the combination of the information cues. Cluster analyses (hierarchical and K-means), ANOVAs, and chi-square tests have been done. Three different positions were observed. In each cluster, the information cues were combined in the same manner. The judgments on punishment are less severe than those on gravity and the judgments on justice less spreaded. The first cluster was called "Often Serious", "Often Punished" and "Often Fair". The second cluster was termed "Sometimes Serious", "Sometimes Punished" and "Sometimes Fair". The third cluster was termed "Often Serious concerning aggression vs. Seldom Serious concerning lateness and cheating", "Often Punished concerning aggression vs. Seldom Punished concerning lateness and cheating" and "Often Fair concerning aggression vs. Seldom Fair concerning lateness and cheating". The first cluster was made up of younger pupils (62,9%), the second cluster was made up of the same proportion of younger and older teenagers and the third cluster was made up of older pupils (62,2%). In cluster 1, the judgment on gravity was positively correlated with those on punishment and justice. In cluster 2, the judgment on punishment was positively correlated with the judgment on justice and this correlation was higher in cluster 3. These results complete the previous studies on moral judgment.

Keywords: Moral judgment; Antisocial behaviour; Teenagers

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The relationship between the type of antisocial behaviour and the components of moral judgment (gravity, punishment and justice) in the context of sports education has received little attention by researchers.

The underlying structure of the children's moral development is related to age (e.g., Piaget, 1932; Kohlberg, 1976). Piaget (1932/1965) wanted to understand the moral developmental structure in children. He investigated whether children's moral judgments are based on intention or outcome by asking them about pairs of stories. In contrast to adults' intention-based judgments, children below 10 years old judged acts and agents according to consequence. On the other hand, Kohlberg (1976) used verbal justifications in moral dilemmas to describe the moral development as a sequence of distinct stages from obedience to authority to morality of egalitarian cooperation. For Piaget, Kohlberg, Surber (1982) and Turiel (1998), the evolution of moral judgment is linked to cognitive maturation and effects of social interactions.

Among previous studies, some have solely involved property damage situations and others have solely involved physical harm situations. Helwig, Zelazo and Wilson (2001) introduced the separate issue of whether children judge according to acts, or to outcomes, that is, the resulting harm. They investigated not only the influence of intentions and outcomes on moral judgments but also whether children and adults judge according to the nature of the acts (e.g. hitting or petting). The participants were asked an "act acceptability" and a "punishment" question. They reported that children's punishment judgments were primarily outcome-based whereas older participants were more likely to use an intention rule (if outcome is negative and intention is negative, then punish). These findings were closely replicated by Nobes, Panagiotaki and Bartholomew (2016): children's judgments according to the nature of the acts were based on the outcome and their punishment judgments were also primarily outcome-based. However, when the question was rephrased, children's judgments

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were influenced more on intention than outcome. Their findings indicated that a methodological change have an effect on children's moral judgments.

Piaget (1932) asked which of the children in each story pair was naughtier, Kohlberg (1976) used moral dilemmas whereas Helwig et al. and Nobes et al. introduced another form of question to understand the moral judgment. Using another methodological approach, this study explored adolescents' moral judgment in sports.

Specifically with regard to the school context, Weinstock, Assor and Broide (2009) showed that the teachers' encouragements contributed to critical thinking in students. In this context, sports education is an activity that may permit adolescents to acquire social rules and values (Weiss, Smith, & Stuntz, 2008) and Fruchart and Rulence-Pâques (2016) showed that there are a high number individual differences. Different types of antisocial behaviour occur in sport. One type is cheating (non-aggressive) behaviour, which is behaviour intended to disadvantage another team, by not respecting the distance of the goals, for example. Other types are aggressive acts which are intended to harm an individual (Stephens, 1998). In order to understand aggression in sport, some researchers (e.g., Buss, 1961) have distinguished between hostile and instrumental aggressive behaviour: hostile aggressive behaviour is an angry aggression intended to hurt someone and instrumental aggressive behaviour is planned and motivated by a desire to achieve a goal. The instrumental aggressive acts are often accepted and encouraged in team sports, whereas the hostile aggressive acts are unacceptable and are discouraged (Loughead & Leith, 2001). Bushman and Anderson (2001) questioned this dichotomy. Anderson and Bushman (2002) specified that aggressive behaviour involves intent to harm, referring to strategically employed aggressive behaviour in order to achieve a goal, and in the latter, harm is a consequence of a bold or assertive act (Bushman & Anderson, 2001). So, the concepts of intent and consequences are essential for not only explaining antisocial behaviour (Russel, 2008) but also the moral judgment of antisocial acts

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(Bredemeier, 1985). The Theory of Information Integration (Anderson, 1996, 2008) may complete the knowledge on moral judgment by studying the manner in which individuals take into account numerous elements of information and combine them cognitively to give a global moral judgment (Anderson, in press; Hommers & Anderson, 1989; Leon, 1980; Przygodzki & Mullet, 1993). This theory was applied to map different moral positions towards the act of aggression in the sports context (Fruchart & Rulence-Pâques, 2014).

In applying the Theory of Information Integration (Anderson, 2008), the aim of the present study was to identify different positions regarding the way in which teenagers integrated four informational cues (level of antisocial act, consequences for the classroom, apologies and teacher's behavior) for judging the degree of gravity of an antisocial act during a tournament organized during a sports lesson. Then, this mapping was explored in punishment and justice judgments.

The main hypothesis was that different individual moral positions would be shown (Fruchart & Rulence-Pâques, 2014, 2016). The second hypothesis was that the different moral positions would be linked to the age of the participants (e.g., Piaget, 1932; Kohlberg, 1976). It was therefore expected that older teenagers would make greater use of intention information in their moral judgments than younger teenagers. The third hypothesis was based on the antisocial behaviour. The judgments were expected to differ depending on the type of behaviour (i.e., being late vs. cheating vs. instrumental aggression vs. hostile aggression). The hostile aggression would be judged more serious than the instrumental aggression because it falls within the law of sports (Kerr, 2002). The fourth hypothesis was that the judgment on gravity would be correlated with the judgments on punishment and justice (Nobes et al., 2016). The fifth hypothesis was that the participants' judgment would be influenced by the apologies: even a simple excuse, without any reparation, can have an important effect on moral judgment (Hommers & Anderson, 1985). The sixth hypothesis was that the

participants' judgment would be influenced by teacher's attitude (Weinstock, Assor, & Broide, 2009).

Method

Participants

The participants were young students recruited and tested by the authors. They were contacted at the schools. The study was explained and we arranged an appointment. All participants were unpaid volunteers. The participants are 423 volunteers living in the North of France. They were separated into two groups of students in secondary schools due to the educational system in France: they were 215 young students from "college" schools ($M = 12.5$, $SD = 1.5$) and 208 older students from "lycée" schools ($M = 16.5$, $SD = 1.5$).

Material

The material consisted of three questionnaires of 32 cards. According to Anderson's method (1996), each card contained a hypothetical scenario of about eight lines, a question and a response scale. In the scenario, a sport teacher has organized a tournament which teams were established previously. A pupil's behaviour is antisocial. Each scenario was designed with regard to the following four factors: (a) the level of antisocial behaviour (the pupil is in late, he is cheating, he is doing an instrumental aggression, he is doing a hostile aggression), (b) apologies (the pupil apologizes *versus* he does not apologize), (c) the consequence for the classroom (it is disrupted *versus* it is not disrupted), (d) the teacher's attitude (he always punishes *versus* he never punishes this kind of behaviour). All possible combinations of these types of information yielded 32 scenarios ($4 \times 2 \times 2 \times 2$). One typical scenario was the following: *A sport teacher has organized a tournament which teams were established previously. One pupil, Frederic, physically aggresses a classmate with the intention to hurt him. He does not apologize. The climate of the classroom is perturbed. The teacher has always punished this kind of behaviour.* In the first questionnaire, the question was: *According*

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to you, which is the gravity level of Frederic's behaviour? Beneath each scenario was an 11-points response scale with “Completely serious” indicated on the right and “Not at all serious” indicated on the left. Each scenario concerned a pupil with a different name. The second questionnaire had the same 32 scenarios and the question was: *According to you, which level of punishment would be required for Frederic?* The 11-points response scale indicated “Completely high” on the right and “Not at all high” indicated on the left. The third questionnaire had the same 32 scenarios and the question was: *According to you, is it just to punish Frederic?* The 11-points response scale indicated “Completely just to punish” on the right and “Not at all just to punish” indicated on the left.

Procedure

For the experimentation, the adolescents' parents, the headmasters of the grammar schools gave their consent. Each participant was presented with three questionnaires (questionnaire about the severity of an antisocial act, questionnaire about the level of punishment, questionnaire about the level of justice to punish). The order of the three questionnaires was counterbalanced to avoid a learning effect. Each participant answered individually by putting marks on the response scale at the location they felt appropriate between the two anchors. Participants worked in a quiet classroom at the school. They had to read each of the 32 stories describing concrete situations and to rate their degree of agreement with it. Participants responded individually. According to the methodology of Anderson (1996), the test was administered in two phases. In the first or familiarization phase, their task was to identify with the student described and to express an opinion about the level of the type of judgment required in each case. Eight scenarios taken randomly from the set of 32 were presented to participants, in order to permit them to familiarize themselves with the task, the procedure and the test materials (Anderson, 2008). The choice of the 8 scenarios was guided so as to expose participants to the full range of stimuli. Subsequently, participants provided

the required ratings. During the following second or experimental phase, the 32 scenarios were randomly administered to participants. Participants provided their ratings at their own pace. The participants were presented with the three questionnaires with the same procedure. The participants took approximately 40 minutes ($M = 39$, $SD = 5$) to complete the three questionnaires.

Data analysis

Each rating by each participant was converted to a numerical value expressing the distance (number of points, from 0 to 10) between the left anchor, serving as the origin and the point which has been checked on the response scale by the participant. These numerical values were then subjected to graphic and statistical analyses.

As we thought that participants were going to respond in very different ways from one another, a cluster analysis was performed on the raw data from all the participants. A hierarchical method was performed to define the number of clusters and then we used the k -means procedure to actually form the clusters.

A hierarchical cluster analysis was conducted using Ward's method with a squared Euclidean distance measure. The number of clusters to be merged from the data was determined with the agglomeration schedule coefficients and dendogram (Aldenderfer & Blashfield, 1984). The validity of the cluster solution was inspected using ANOVA with the cluster membership as an independent variable and information cues as dependent variables (Aldenderfer & Blashfield, 1984).

After having defined the number of clusters, we used a technique that was advocated by Hofmans and Mullet (2013, K-means, Euclidian distances). This approach allows one to identify individual differences in integration rules and scale values (Hofmans & Mullet, 2013). In applying this procedure, participants are placed on the basis of their scale values and

in a second step, for every cluster of scale values, individuals are clustered on the basis of their standardized responses.

Finally, separate ANOVAs were performed on the data of each cluster, and Pearson's chi-square test was conducted. Correlations were done between mean ratings of each cluster in the judgment on gravity and those observed in the judgment on punishment and the judgment on justice.

Results

The results of a hierarchical cluster analysis suggested the tenability of a three-clusters solution ($K = 3$). The ANOVA with the cluster membership as an independent variable and information cues as dependent variables showed that Cluster variable is significant, $F(2, 420) = 373.34, p < .001, \eta^2 p = .64$. This finding confirmed its tenability. Figure 1 presents the effect of an antisocial act, consequences and apologies on judgments on gravity observed in each of the three clusters from "*Cluster Analysis All Participants*". In the same manner, Figure 2 presents the effect of an antisocial act, consequences and apologies on judgments on punishment observed in each of the three clusters, and Figure 3 presents the effect of an antisocial act, consequences and apologies on judgments on justice observed in each of the three clusters from "*Cluster Analysis All Participants*". The mean ratings are on the y-axis. The two levels of consequences are on the x-axis. Each curve corresponds to one level of the act factor. Each panel corresponds to one level of apologies.

Cluster analysis on the raw data of the "gravity questionnaire" from all participants: "Cluster Analysis All Participants" (Figure 1).

Figure 1 presents the three clusters for the judgment on gravity. Cluster 1 ($n = 178$) was termed "Often Serious" since the judgments are above the middle of the scale ($M = 6.77, SD = .77$). It is shown in both top panels of Figure 1. The curves are separate, which indicates an effect of the act. The curves slope, which indicates an effect of the consequences. The

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curves of the right panel are slightly above the curves of the left panel, which indicates an effect of the apologies. The Consequences x Apologies x Antisocial behavior interaction is significant, $F(3, 531) = 4.15, p < .006, \eta^2p = .023$.

Cluster 2 ($n = 119$) was termed “Sometimes Serious” since the judgments are distributed on both sides of the middle of the scale ($M = 4.19, SD = .87$). It is shown in both middle panels of Figure 1. The curves are separate, which indicates an effect of the act. The curves slope slightly, which indicates an effect of the consequences. The curves of the right panel are slightly above the curves of the left panel, which indicates an effect of the apologies. The Consequences x Apologies x Antisocial behavior interaction is significant, $F(3, 375) = 5.9, p < .001, \eta^2p = .045$.

Cluster 3 ($n = 126$) was termed “Often Serious concerning aggression vs. Seldom serious concerning lateness and cheating” since the curves plotted in two groups ($M = 5.77, SD = .69$). It is shown in both bottom panels of the Figure 1. The slope of the curves is less ascendant than in Cluster 1, which indicates a lesser effect of the consequences. The curves of the right bottom panel are slightly above the curves of the left bottom panel, which indicates an effect of the apologies. Both graphs presented two groups of curves, which indicates an effect of the nature of the act. Hostile and instrumental aggressions are judged more serious than cheating and being late. The Consequences x Apologies x Antisocial behavior interaction is significant, $F(3, 354) = 4.82, p < .003, \eta^2p = .039$. An ANOVA was conducted on the data from the cluster 1 for the judgments on gravity, punishment and justice. The main results are shown in Table 1.

Cluster analysis on the raw data of the “punishment questionnaire” from all participants: “Cluster Analysis All Participants” (Figure 2).

Figure 2 presents the three clusters for the judgment of punishment. Cluster 1 was termed “Often Punished” since the judgments grows from the middle of the scale ($M = 5.88,$

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$SD = 1.21$) according to the act. It is shown in both top panels of Figure 2. The parallelism of the curves shows that the integration law is additive. The Consequences x Apologies x Antisocial behavior interaction is not significant, $F(3, 531) = 2.1, p < .09, \eta^2p = .012$.

Cluster 2 was termed “Sometimes punished” since the judgments were near the middle of the scale ($M = 4.27, SD = 1.03$). It is shown in both middle panels of Figure 2. The parallelism of the curves shows that the integration law is additive. The Consequences x Apologies x Antisocial behavior interaction is not significant, $F(3, 339) = 1.19, p < .31, \eta^2p = .01$.

Cluster 3 was termed “Often punished concerning aggression vs. seldom punished concerning lateness and cheating” since the curves plotted in two groups ($M = 5.26, SD = 1.11$). It is shown in both bottom panels of Figure 2. Both graphs presented two groups of curves, which indicates an effect of the nature of the act. Hostile and instrumental aggressions are judged to be more punished than cheating and being late. The Consequences x Apologies x Antisocial behavior interaction is significant, $F(3, 381) = 7.1, p < .000, \eta^2p = .053$. An ANOVA was conducted on the data from the cluster 2 for the judgments on gravity, punishment and justice. The main results are shown in Table 1.

Cluster analysis on the raw data of the “justice questionnaire” from all participants: “Cluster Analysis All Participants” (Figure 3).

Figure 3 presents the three clusters for the judgment on justice. Cluster 1 was termed “Often fair” since the judgments are above the middle of the scale ($M = 6.15, SD = 1.05$) for all the acts. It is shown in the top panels of Figure 3. The parallelism of the curves shows that the integration law is additive. The Consequences x Apologies x Antisocial behavior interaction is not significant, $F(3, 528) = 1.66, p < .17, \eta^2p = .009$.

Cluster 2 was termed “Sometimes fair” since the judgments were near the middle of the scale ($M = 4.66, SD = 1.35$). It is shown in the middle panels of Figure 3. The parallelism

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of the curves shows that the integration law is additive. The Consequences x Apologies x Antisocial behavior interaction is not significant, $F(3, 342) = 4.11, p < .007, \eta^2p = .035$.

Cluster 3 was termed “Often fair concerning aggression vs. seldom fair concerning lateness and cheating” since the curves plotted in two groups ($M = 5.81, SD = .97$). It is shown in the bottom panels of the Figure 3. The punishments for hostile and instrumental aggressions are judged fairer than those for cheating and being late. The Consequences x Apologies x Antisocial behavior interaction is significant, $F(3, 372) = 4.94, p < .002, \eta^2p = .038$. An ANOVA was conducted on the data from the cluster 3 for the judgments on gravity, punishment and justice. The main results are shown in Table 1.

Table 2 shows the composition of each cluster in terms of participants’ schools (“college” or “lycée”). The 2 (students from “college”/students from “lycée”) x 3 (Clusters) Pearson’s chi-square test is significant, $\chi^2(2) = 19.638, p < .000$. The first cluster is significantly made up of students from “college” (62.9 %). The second cluster is made up of the same proportion of students from “college” and “lycée”. The third cluster is significantly made up of students from “lycée” (62.2 %).

Correlations have been computed between mean ratings observed in each questionnaire (Gravity, Punishment and Justice). In cluster 1, the judgment on gravity is positively correlated with those on punishment (.44, $p < .01$) and justice (.35, $p < .01$). In cluster 2, the judgment on punishment is positively correlated with the judgment on justice (.38, $p < .01$). In cluster 3, the judgment on punishment is positively correlated with the judgment on justice and the correlation is better (.50, $p < .01$).

Discussion

The main purpose of this study was to examine the moral judgment of adolescents of antisocial behaviour in a school context during a sports lesson. They have to judge the gravity of this antisocial behaviour. They also have to judge the level of punishment for this act and

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they have to judge how fair the punishment is. The first hypothesis was that different individual moral positions would be shown (Fruchart & Rulence, 2014, 2016). That was confirmed. Three positions were identified. The antisocial behaviour, the consequences of this behaviour and the apologies were the information cues principally taken into consideration. In general, in each cluster, the information cues are combined in the same manner. Each cluster can be defined by three criteria of judgment concerning antisocial behaviour. Cluster 1 corresponds to “often serious, often punished, often fair”. Cluster 2 corresponds to “sometimes serious, sometimes punished, sometimes fair”. Cluster 3 corresponds to “Often Serious concerning aggression vs. Seldom serious concerning lateness and cheating, Often punished concerning aggression vs. seldom punished concerning lateness and cheating, Often fair concerning aggression vs. seldom fair concerning lateness and cheating”. In this latter cluster, the curves plot in two groups. Hostile and instrumental aggressive acts directed toward someone are judged more serious than cheating and being late. These hostile and instrumental aggressive acts are judged to be very serious, require a more severe punishment and the punishment is judged to be very fair. Our findings demonstrated differences in moral judgment (Fruchart & Rulence-Pâques, 2014, 2016). They confirm the special status of antisocial aggressive behaviour within the context of sport as a physical act that can injure another person with intent to harm (Russell, 2008).

The second hypothesis was that the composition of clusters would be linked to the participants' age (e.g., Piaget, 1932; Kohlberg, 1976). This hypothesis was supported by the data. The composition of the three clusters was linked to the age. In the first cluster, the percentage of students from “college” schools (62.9 %) was higher than the percentage of students from “lycée” schools (37.1%). The second cluster was made up of about the same proportion of students from “college” schools (46%) and from “lycée” schools (54%). In the third cluster, the percentage of students from “lycée” schools (62.2%) was higher than the

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percentage of students from “college” schools (37.8%). In the first and the second cluster, concerning the judgments on punishment and justice, a parallelism of the curves was observed and there was no interaction between Consequences x Apologies x Antisocial behaviour which reflects an additive effect of these factors. However, they did not consider the intention of the aggressive act. In the third cluster of the questionnaires on gravity, punishment and justice, the curves were plotted in two groups. In this cluster, composed of a higher percentage of older adolescents, the judgment on punishment was positively correlated with the judgment on justice and the correlation was better than in cluster 2. The older the adolescents were, the more the intention was considered to be important, especially when the antisocial act was done deliberately towards someone. Therefore, the more the judgment on punishment is severe, the more the punishment is considered to be fair. As shown in Gauché and Mullet (2005), the antisocial aggressive act would be less serious when an individual had no intention to injure someone. Individuals were more inclined to forgive when the antisocial act was carried out without intent to harm (Tenenbaum, Stewart, Singer, & Duda, 1997). These findings confirm that younger pupils were influenced much more by outcome than by intention (Przygodzki & Mullet, 1997) and that their punishment judgments were also primarily outcome-based (Helwig et al., 2001; Nobes et al., 2016). These findings extend the different positions on moral judgment in the domain of sport (Fruchart & Rulence-Pâques, 2014, 2016). They explored the notions of gravity, punishment and justice together and showed that the age was linked to the judgment of the gravity of an antisocial act, to the judgment of the level of punishment required and to the judgment of justice according to this punishment.

The third hypothesis was based on antisocial behaviour. The judgments were expected to differ depending on the type of behaviour (i.e., being late *vs.* cheating *vs.* instrumental aggression *vs.* hostile aggression). This hypothesis was supported by the results. Unlike being

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late and cheating, aggressive acts may have severe consequences (e.g., injuries). Thus, the type of behaviour influences the judgments on gravity, punishment and justice. These results show that antisocial hostile aggression is judged more serious, requires a more severe punishment, that is more deserved and therefore fairer than instrumental aggression. They show that adolescents understand that antisocial hostile aggression falls within the law of sports (Kerr, 2002) and the judgments are more salient when the act is viewed as unacceptable (Widmeyer, Dorsch, Bray, & McGuire, 2002).

The fourth hypothesis was that the judgment on gravity would be correlated with the judgments on punishment and justice. This hypothesis was confirmed in the first cluster. In this cluster, the judgment on gravity was positively correlated with the judgments on punishment and justice. For the members of cluster 1, the more the act was serious, the more it was judged to require punishment and the more the punishment was judged to be fair. For the members of cluster 2 and cluster 3, the judgment on gravity was not correlated with the judgment on punishment: as evoked by Coslin & Pain (1998). These two types of judgment are very different because evaluating the gravity of an act constitutes simply taking a position on the facts, whilst punishing the author implies a decision making on the future of someone. However, there was a link between the judgments on punishment and justice: the judgment on punishment was positively correlated with the judgment on justice in cluster 3 and the correlation was better than in cluster 2. For the members of these two other clusters, when the judgment on punishment was more severe, then the punishment required was also judged to be more severe, especially as they were older. These findings confirm the distinction between the three clusters.

The fifth hypothesis was that the participants' judgment would be influenced by the apologies. This hypothesis was supported by the results. It confirms a previous study

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(Hommers & Anderson, 1985). The apologies imply that the individual is conscious of his act, which increases his moral character and consequently affects moral judgment.

The sixth hypothesis was that the participants' judgment would be influenced by the teacher's attitude. This hypothesis is partly confirmed. On the one hand, the results showed a weak effect of the teacher's attitude on the judgments on gravity and punishment. It can be explained by the fact that young children reify the rules and norms of the adult world as immutable standards for what is good or bad, while adolescents with increased cognitive and social maturity, become more autonomous and their judgments are more based on individually determined principles. On the other hand, the results showed a higher effect of the teacher's attitude on the judgment on justice. The adolescents judged that a punishment is all the more fair as the teacher always punished an antisocial act. This result confirmed that the adolescents' perceptions of their teachers would be positively associated with adolescents' moral judgment (Weinstock & al., 2009).

As limitations, we can mention the question of the operationalization of two of our factors, the "level of antisocial behaviour" and the "teacher's attitude". Effectively, the type of act is confused with the notion of intention while these two informational cues must be distinguished. For example, a pupil can be late inadvertently or voluntarily; it is also possible to cheat by ignoring the specific rules of the game. Moreover, the weak effect of "the teacher's attitude" factor is surprising because many studies have shown that moral prescriptions are acquired through the observation of parental and teacher models (Bandura, 1977; Leon, 1984). This result may be explained by the fact that information about the teacher refers to his « habitual » attitude and not directly to the scenario.

In terms of practical implications, sports teachers' attitude might be an important factor in promoting the adolescents' moral judgment and development. According to Hoffman (1983), the acquisition of moral rules depends on observational learning but also on the nature

of educational practices, and he discusses some implications for socialization and moral education (Hoffman, 2000). Some of his recommendations, taken up in schools (e.g. Pagoni-Andréani, 1999, in France), could be generalized in the sport-education context.

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Table 1 Main results of ANOVAs conducted in each cluster for judgment on gravity, punishment, and justice.

	Effect		Error		<i>F</i>	<i>p</i>	η^2_p
	<i>df</i>	<i>MS</i>	<i>df</i>	<i>MS</i>			
GRAVITY							
CLUSTER 1							
Teacher's attitude	1	44.12	177	7.39	5.97	.016	.03
Consequences	1	1162.59	177	9.32	124.73	.000	.41
Apologies	1	1801.51	177	11.74	153.32	.000	.46
Antisocial behaviour	3	534.45	531	7.30	73.12	.000	.29
CLUSTER 2							
Teacher's attitude	1	73.39	125	7.76	9.44	.003	.07
Consequences	1	395.00	125	5.94	66.47	.000	.34
Apologies	1	1963.93	125	20.52	95.66	.000	.43
Antisocial behaviour	3	1258.40	375	9.02	139.39	.000	.52
CLUSTER 3							
Teacher's attitude	1	37.32	118	2.92	12.78	.001	.09
Consequences	1	492.16	118	6.17	79.71	.000	.40
Apologies	1	1314.12	118	9.47	138.65	.000	.54
Antisocial behaviour	3	5850.79	354	9.75	599.86	.000	.83
PUNISHMENT							
CLUSTER 1							
Teacher's attitude	1	106.26	177	10.23	10.38	.002	.05
Consequences	1	682.72	177	8.19	83.36	.000	.32
Apologies	1	3186.02	177	13.74	231.74	.000	.56
Antisocial behaviour	3	1140.22	531	10.98	103.83	.000	.37
CLUSTER 2							
Teacher's attitude	1	128.62	113	9.86	13.03	.000	.10
Consequences	1	230.50	113	8.41	27.39	.000	.19
Apologies	1	2117.00	113	15.84	133.61	.000	.54
Antisocial behaviour	3	889.69	339	9.67	91.97	.000	.44
CLUSTER 3							
Teacher's attitude	1	198.19	127	8.72	22.71	.000	.15
Consequences	1	441.65	127	5.21	84.67	.000	.40
Apologies	1	1651.66	127	8.48	194.73	.000	.60
Antisocial behaviour	3	3289.05	381	16.20	202.91	.000	.61
JUSTICE							
CLUSTER 1							
Teacher's attitude	1	1270.92	176	21.62	58.78	.000	.25
Consequences	1	606.21	176	7.44	81.44	.000	.31
Apologies	1	1471.53	176	14.38	102.33	.000	.36
Antisocial behaviour	3	796.11	528	10.45	76.12	.000	.30
CLUSTER 2							
Teacher's attitude	1	817.99	114	22.35	36.59	.000	.24
Consequences	1	519.75	114	9.44	55.00	.000	.32
Apologies	1	1527.62	114	16.87	90.52	.000	.44
Antisocial behaviour	3	667.48	342	9.26	72.02	.000	.38
CLUSTER 3							
Teacher's attitude	1	2308.88	124	27.98	82.49	.000	.39
Consequences	1	595.21	124	7.24	82.17	.000	.39
Apologies	1	1455.64	124	9.56	152.15	.000	.55
Antisocial behaviour	3	2552.12	372	14.44	176.73	.000	.58

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Table 2.

The composition of each cluster in terms of participants' schools ("college" or "lycée").

<i>Participants</i>	<i>Cluster 1</i>	<i>Cluster 2</i>	<i>Cluster 3</i>	<i>Total</i>
Pupils from "College"	112 (62.9%)	58 (46%)	45 (37.8%)	215
Pupils from "Lycée"	66 (37.1%)	68 (54.0%)	74 (62.2%)	208
Total	178	126	119	423

Note: Percentages are significant at $p < .000$ in the 2 (Type of pupils) x 3 (Cluster) Pearson's chi-square test.

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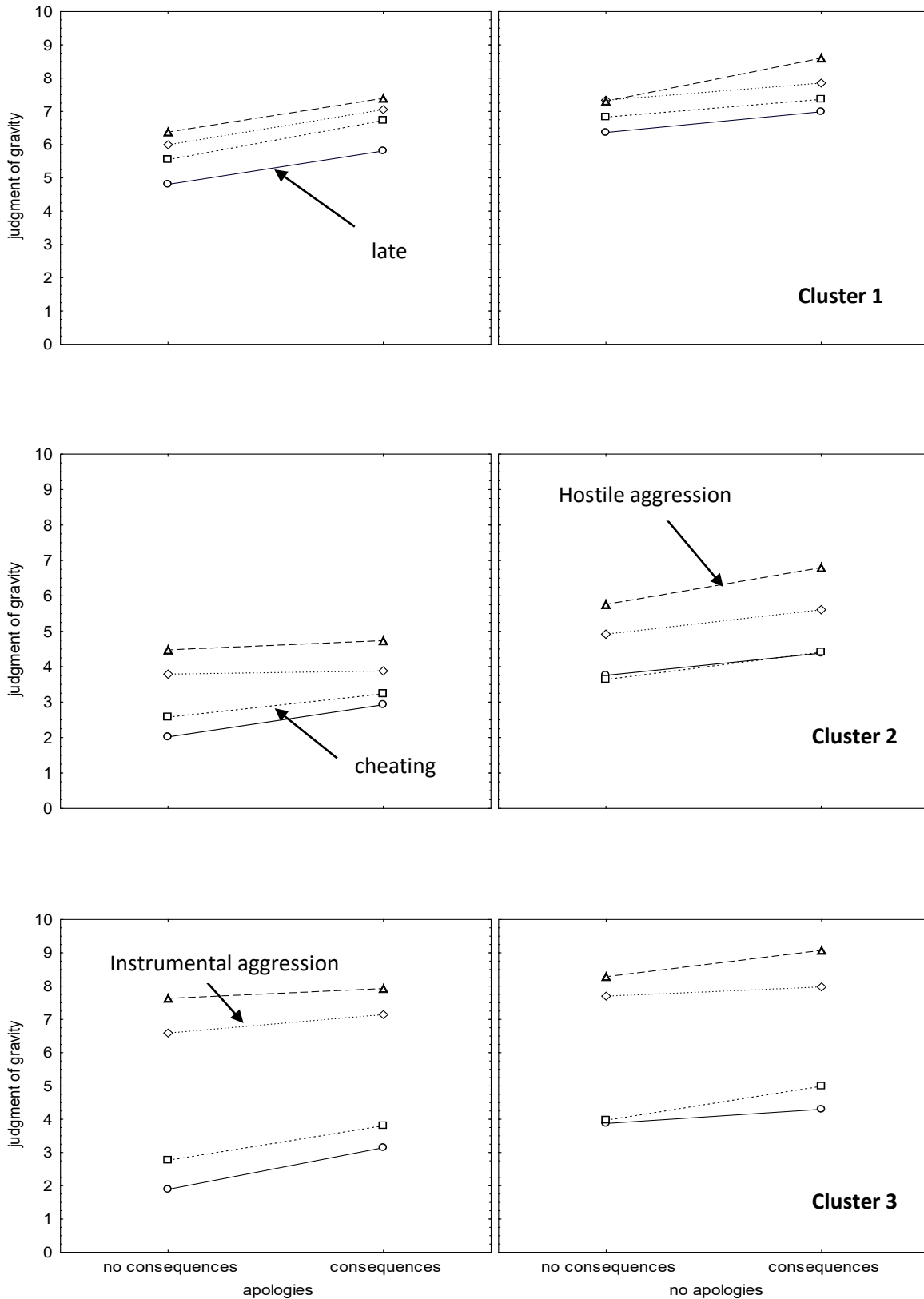


Figure 1: Effect of an act, consequences and apologies on judgments on gravity observed in each of the three clusters from “Cluster Analysis All Participants”.

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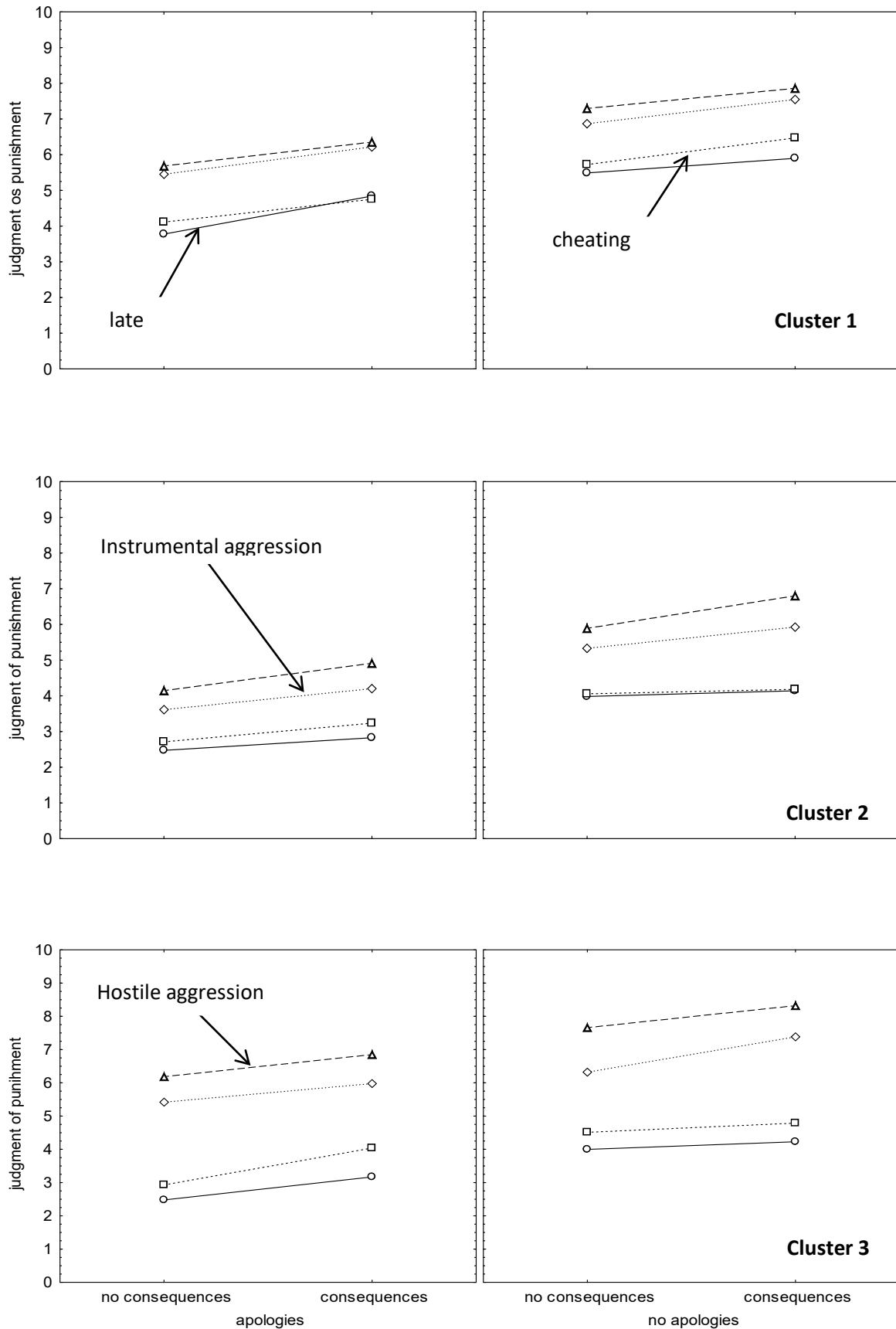


Figure 2: Effect of an act, consequences and apologies on judgments on punishment observed in each of the three clusters from “Cluster Analysis All Participants”.

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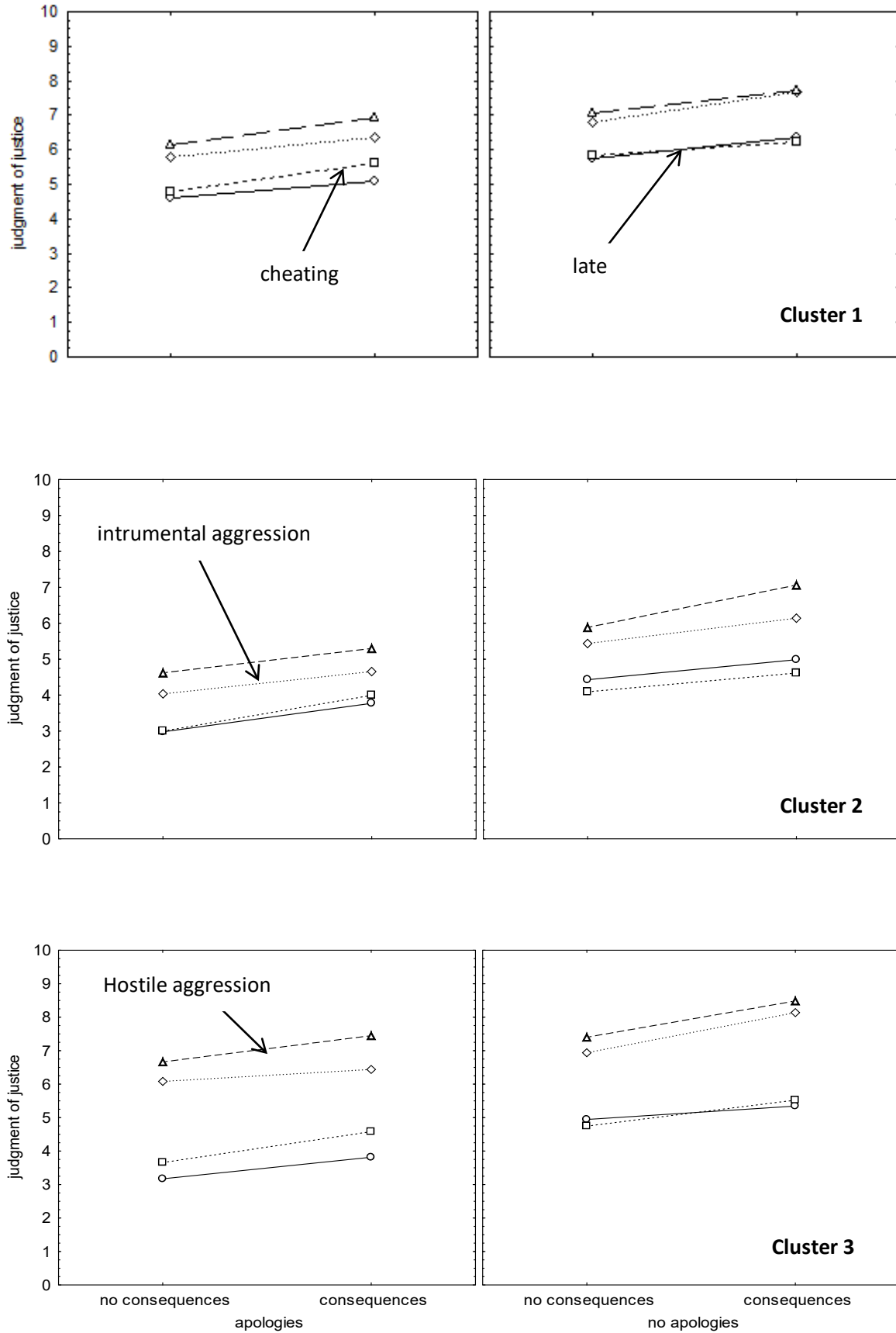


Figure 3: Effect of an act, consequences and apologies on judgments on justice observed in each of the three clusters from “Cluster Analysis All Participants”.