

Social Value Orientation Effects on Adolescents Friendship Quality

Syiva Fitria¹, Sabine Peters²,

¹Faculty of Usluhuddin, Adab, and Dakwah, IAIN Langsa, ²Faculty of Behavioral Sciences, Leiden University

¹syivafitria@iainlangsa.ac.id, ² s.peters@fsw.leidenuniv.nl

First received:	Revised:	Final Accepted:
15 January 2019	24 February 2019	15 April 2019

Abstract

The current study intended to explore the association between Social Value Orientation (SVO) and friendship quality in adolescence, the development as well as gender and age differences. Participants between ages 12 and 25 ($N = 292$) completed a series of games to measure their SVO and Friendship Quality Scale in order to assess their friendship quality. Analysis of covariance confirmed that SVO did not affect friendship quality. No age and gender differences were found in SVO. However, the results revealed that there was a significant gender difference in friendship quality, where girls have higher positive friendship quality. There was also an age effect on friendship quality, such that, as age increased, negative friendship quality decreased. In conclusion, there was no evidence that SVO influences someone friendship quality. It is possible that SVO only influences the number of friends that someone has.

Keywords: social value orientation, SVO, friendship quality, adolescents, gender, age

INTRODUCTION

It is suggested that once children become adolescents, their social behavior and interaction become more complicated and meaningful due to physical and environmental factors (Derks, Lee, & Krabbendam, 2014). One noticeable social factor that constantly changes along development is friendship. In addition, people have different social motives when making a decision and these motives are known as Social Value Orientation (SVO). It is stated that this SVO principle could be used in order to understand social interaction and interpersonal behavior (Van Lange, De Cremer, Van Dijk, & Van Vugt, 2007). However, little is known regarding how adolescents' SVO influence their friendship quality. Therefore, the current

study intended to assess how friendship quality related to SVO.

Social Value Orientation (SVO) is an approach defining individual differences in consideration of outcomes for oneself and another individual when allocating resources (McClintock, 1972). McClintock and Van Avermaet (1982) stated that SVO is a motivational orientation of outcome distribution for oneself and others. SVO significantly influences an individual's social behavior in a setting where the outcome is dependent on others (Librand, Jansen, Rijken, & Suhre, 1986). Thus, SVO explains how individuals differ motivationally and whether they will make a decision based on their own or mutual importance.

There are three distinctive types of SVO recognized; prosocial, individualistic, and

competitive (Eek & Gärling, 2008). Prosocial SVO is defined by maximizing mutual gains as the goal. Kuhlman, Camac, and Cunha (1986) stated prosocials value cooperation and put forward fairness. Individualistic SVO is maximizing one's own benefit without concern for the other's outcome, whereas, competitive SVO is maximizing the difference between own and others' outcomes. Additionally, De Dreu & Boles (1998) suggested that SVO could affect cognition and influence behavior related to decision making, such as negotiating.

One study reported that SVO might influence individual affect and cognition as well as behavior in daily functioning (Van Lange & Folmer, 2007). Previous studies have shown that prosocials increases helping behavior (McClintock & Allison, 1989) and willingness to make sacrifices in close relationships (Van Lange et al., 1997). Also, SVO could be used to understand relationships as it is related to attachment security, which is important in continuing healthy relationships (Van Lange, Otten, De Bruin & Joireman. 1997). Therefore, how individual SVO influences the shape and form of relationships in everyday life is becomes one of the foci of this study.

Additionally, adolescence is known as an important stage where the transition to adulthood happens and is characterized by changes in many aspects such as cognitive, physical, and social (Mann, Harmoni & Power, 1989). One distinctive characteristic of mature adolescents is the improved ability in decision-making (Mann et al., 1989). Many factors could influence how adolescents make decisions in social interactions, including SVO. Nonetheless, SVO has not been widely measured in adolescents, as one of the social factors influencing decision-making.

Referring to SVO study in adults and children, Van Lange, et al. (1997) found that there was a parallel relationship between prosocial behavior and age where prosocial behavior increased as age increased. It also suggested that prosocial behavior increased with age while individualist and competitiveness decreased. Au and Kwong (2004) agreed, that more adults fall into prosocial category followed by individualistic and competitive, although, some of them have inconsistent SVO. However, is it also suggested that the differences in social interaction experiences, from early childhood to young adulthood, resulted in different patterns of SVO during that period (Van Lange, et al., 1997). Additionally, results from child studies showed some inconsistency. One study found that 4 to 9-year-olds children are becoming more competitive as they get older (Kagan & Madsen, 1971). Accompanying this study, Knight, Dubro, & Chao (1985) also found that 8 to 10-year-olds children were more competitive. Nonetheless, another study mentioned that more children from 5 to 8-year-olds were fall into cooperative type than other SVO types (McClintock & Moskowitz, 1976). Conversely, a different study measuring SVO, found that 8 to 11 year-olds were more individualistic (Knight et al., 1981). Thus, based on the studies mentioned above, it could be concluded that there is no fixed pattern of the development of SVO across different stages of childhood and adolescents.

In relation to gender differences, a study found non-significant gender differences in social orientation (Kuhlman & Marshello, 1975). Nevertheless, one study stated that there was a significant difference in social value orientation distribution between boys and girls where boys were more individualistic compared to girls

while girls were categorized as more prosocial oriented than boys (Iedema & Poppe, 199). Correspondingly, other studies have confirmed that compared to boys, girls are more pro-socially oriented. (Eisenberg, Cumberland, Guthrie, Murphy, & Shepard, 2005; Derk et al., 2014)

In addition, given that many variables change during adolescence, friendship is one variable that is important to assess. Rubin, Bukowski, & Parker (2006) defined friendship as positive affect shared in a voluntary dyadic relationship that is intimate and both parties accept each other. Berndt (1982) stated that there is a significant change in adolescents' friendship characteristics and its importance. Moreover, friendship is also one social factor that develops during adolescence that consists of peer network growth, increased close friendship importance and romantic relationship appearance (La Greca & Prinstein, 1999). Crockett, Losoff, & Petersen (1984) identified that adolescents increasingly spend time with their friends. Consequently, in adolescents, close friends start to become the primary social support instead of parents, which also influences the development of their self-concept and well-being (Furman & Buhrmester, 1992). Moreover, friendship plays an important part in the social arena and fulfills the need for affection, togetherness, and closeness (Furman & Collins, 2009). Therefore, friendship as a social factor is important topic to investigate in adolescence.

Friendship is a complex construct that consists of many components. One of the components is friendship quality. Berndt (2002) argued that high-quality friendship strengthens individual development. Accordingly, there are positive and negative features of a good friendship. Positive

features of friendship are prosocial behavior, self-esteem support, intimacy, and loyalty, while the negative features of friendship are conflicts, dominance attempts, and rivalry. It is suggested that high-quality friendships are characterized by high levels of positive features and low levels of negative features. Furthermore, a study by Kuttler, La Greca, and Prinstein (1999) found significant gender differences in friendship qualities. Girls reported that they have a higher quality of friendship than boys, marked by greater levels of support, intimacy, and companionship.

Nevertheless, few available studies provide an established link between SVO and friendship quality. Recent research, in an online user study, reported that social value orientation influences the number of friends people make (Chesney, Chuah, & Hoffmann, 2016). Additionally, one study reported that prosocial behavior was significantly related to friendship. McGuire and Weisz (1982) implied that compared to adolescents who do not have friends, those with friends are more likely to show prosocial behavior.

The current study intended to examine the relationship between SVO and friendship quality with a specific focus on adolescence. This study also sought to address the development of both SVO and friendship quality in adolescents as well as gender differences in both variables. It was hypothesized that first, adolescents who are prosocially oriented have higher friendship quality compared to those that are individualist or competitive. Second, that girls are more prosocially oriented than boys. Third, that girls would have a higher quality of friendship than boys. Lastly, it was expected that as age increases, friendship quality also increases and

adolescents become more prosocially oriented, rather than the other types of SVO.

METHOD

Participants

This study was part of a larger project on cognitive and affective development (i.e. Peters, Peper, Van Duijvenvoorde, Braams, & Crone, 2016). The current study involved 292 participants (female: 153, male: 139) with an age range from 12 to 25 ($M = 14.06$, $SD = 3.61$) who were recruited through local schools and advertisements. All participation was voluntary. Participants signed informed consent at the beginning of the study and were allowed to withdraw from the study at any time without any penalties. The procedures in this study were approved by the Ethical Review Board. After participation in the study, children received presents and parents received 30 euros for travel compensation.

Social Value Orientation

Participants' SVO was measured by asking participants to complete a series of games (Messick & McClintock, 1968). This measure has been found to be a reliable measure of SVO (Kuhlman et al., 1986). Participants received nine scenarios with

among options of outcomes for oneself or another person. An example of decomposed game options are Option A, 480 points for self and 80 points for other (competitive; the completer obtains more point than the other person but less than in the individualistic option), Option B, 540 points for self and 280 points for other (individualistic; the completer obtains more points than the other person) and Option C, 480 points for self and 480 points for other (prosocial; the completer and the other person get the same amount of points). Six consistent choices of one social value would determine whether participants classified as competitive, individualistic or prosocial. In this study, it was decided to also categorize SVO into just two types; prosocial, and prosself. Prosself is the combination of individualist and competitive.

Friendship Quality Scale

Participants were asked to complete the Friendship Quality Scale (FQS) that has been found to be a valid and reliable measure of friendship quality (Bukowski, Hoza, & Boivin, 1994). FQS consist of 23-items that belong to 5 subscales; conflict (4 items), closeness (5 items), companionship (4 items), receiving help (5 items) and security (5 items). The item examples are "my friend would help me if I needed it" and "my friend and I spend all our free time together". Participants were provided with 5-point Likert scale response option ranging

Table 1. Descriptive statistics for age separated for SVO

		SVO			SVO	
		Prosocials	Individualist	Competitive	Prosocials	Prosself
Age	M	16.06	15.76	14.79	16.06	15.63
	SD	3.226	3.099	2.715	3.226	3.056

three alternative options for each scenario. Participants were asked to make a choice

from 1= not true to 5 = really true.

RESULTS

First I examined the relationship

age did not vary significantly with the type of SVO (prosocial, prosocial), $F(1, 187) = .903$, $p = .343$.

Table 2. Descriptive statistics for friendship quality according to gender.

		Female			Male		
		N	M	SD	N	M	SD
FQS	FQS Positive	100	57.92	5.302	89	53.87	6.091
	FQS Negative	100	11.48	3.868	89	12.43	3.934

between the two main variables and age. The descriptive statistics for age separated for friendship quality and SVO are described in Table 1. A Pearson's r revealed that there is no significant relationship between FQS Positive ($M = 56.01$, $SD = 6.02$) and age ($M = 15.82$, $SD = 3.13$), $r(285) = .06$, $p =$

Next I investigated sex differences in FQS and SVO. An independent sample t-test revealed that there was a significant difference between females ($M = 57.92$, $SD = 5.30$) and males ($M = 53.87$, $SD = 6.09$) on FQS positive scale, $t(187) = 4.89$, $p < .001$ and there was no significant difference between

Table 3. Participants distribution according to gender and SVO.

	Prosocial	Individualist	Competitive	Total	Prosocial	Proself	Total
Female	46	44	10	100	46	54	100
Male	40	45	4	89	40	49	89
Total	86	89	14	189	86	103	189

.312. However, there is a significant negative relationship between FQS Negative and age, such that as age ($M = 15.82$, $SD = 3.13$) increases, the FQS negative scale ($M = 11.93$, $SD = 3.92$) decreases, $r(285) = -.12$, $p = .045$.

A one-way ANOVA revealed that age did not vary significantly with type of SVO (prosocial, individualist, competitive), $F(2, 186) = 1.028$, $p = .360$. It also revealed that

females ($M = 11.48$, $SD = 3.87$) and males ($M = 12.43$, $SD = 3.93$) on FQS negative scale, $t(187) = -1.67$, $p = .097$.

Next, I investigated the relationship between SVO and gender. A chi-square test of independence revealed that there was no significant relationship between type of SVO (prosocial, individualist, competitive) and gender, $\chi^2(2) = 2.37$, $p = .306$. There was no significant relationship between type of

Table 4. Descriptive statistics for friendship quality according to type of SVO

	Prosocial	Individualist	Competitive				
	M	SD	M	SD	M	SD	
FQS Positive	56.22	5.763	55.91	6.347	55.36	5.839	
FQS Negative	11.80	3.901	11.91	3.881	12.79	4.423	

Table 5. Descriptive statistics for friendship quality according to type of SVO

	Prosocial		Proself	
	M	SD	M	SD
FQS Positive	56.22	5.763	55.83	6.256
FQS Negative	11.80	3.901	12.03	3.947

SVO (prosocial, prosocial) and gender, $\chi^2(1) = .02, p = .884$.

Finally I tested the hypothesis that adolescents who are prosocially oriented have higher friendship quality compared to

was no significant effect of SVO type (prosocial, prosocial) on FQS Positive scale after controlling for age and gender, $F(1, 185) = .12, p = .734$ and there was no significant effect of SVO type (prosocial, prosocial) on FQS Negative scale after

Table 6. Descriptive statistics for friendship quality according to type of SVO and gender

FQS	Gender	M	Prosocial	Individualist	Competitive	Prosocial	Proself
			SD	SD	SD	SD	SD
Positive	Female	M	58.22	57.61	57.90	58.22	57.67
		SD	5.194	5.637	4.654	5.194	5.429
	Male	M	53.93	54.24	49.00	53.93	53.82
Negative	Female	M	11.37	11.27	12.90	11.37	11.57
		SD	4.095	3.330	5.021	4.095	3.699
	Male	M	12.30	12.53	12.50	12.30	12.53
		SD	3.653	4.299	3.000	3.653	4.184

those that are individualist or competitive. A one-way ANCOVA was conducted to determine the difference between types of SVO on friendship quality controlling for age and gender. It revealed there was no significant effect of SVO type (prosocial, individualist, competitive) on FQS Positive scale after controlling for age and gender, $F(2, 184) = .40, p = .673$. There was no significant effect of SVO type (prosocial, individualist, competitive) on FQS Negative scale after controlling for age and gender, $F(2, 184) = .42, p = .656$. Also, it revealed there

controlling for age and gender, $F(1, 185) = .07, p = .785$.

A two-way ANCOVA was conducted to determine the effect of different types of SVO (prosocial, individualist, competitive) and gender (female, male) on friendship quality controlling for age. For FQS positive scale, it revealed that there was no significant main effect of SVO, $F(2, 182) = 0.97, p = .380$. However, there was a significant main effect of gender, $F(1, 182) = 19.91, p = .00$. There was no significant

interaction between SVO types and Gender on FQS Positive scale after controlling for age, $F(2, 182) = 1.32, p = .269$. For FQS

was no significant interaction between the effect of SVO and gender on FQS Negative scale after controlling for age, $F(2, 182) = 1.82, p = .834$.

For the other SVO type (prosocial, prosself), it revealed that there was no main effect of SVO on FQS positive, $F(1, 184) = 0.10, p = .755$. However, there was a main effect of gender, $F(1, 184) = 24.69, p = .00$. There was no significant interaction between the effect of SVO type and gender on FQS Positive scale after controlling for age, $F(1, 184) = 1.46, p = .703$. For FQS negative, there was no main effect of SVO and gender, $F(1, 184) = 0.07, p = .794, F(1, 184) = 3.44, p = .065$. There was no significant interaction between the effect of SVO and Gender on FQS Negative scale after controlling for age, $F(1, 184) = .23, p = .87$.

DISCUSSIONS

The objective of the current study was to examine the relationship between SVO and friendship quality, specifically the effect of adolescents' SVO on their friendship quality. For the first hypothesis, I tested whether prosocially oriented adolescents are more likely to have higher friendship quality. In contrast, the hypothesis was rejected as the results disclosed that SVO did not affect their positive and negative friendship quality. It could be that SVO only affects the quantity of friends that individuals make, but not friendship quality, as previous studies specified that adolescents with more friends apparently show more prosocial behavior (Chesney et al, 2016; McGuire & Weisz, 1982). Furthermore, Berndt (2002) suggested that high quality friendship are characterized by positive and negative

negative scale, there was no significant main effect of SVO and gender, $F(2, 182) = 0.18, p = .835, F(1, 182) = 0.69, p = .408$. There

features that include factors such as prosocial behavior, self-esteem support, intimacy, loyalty, conflicts, dominance attempts, and rivalry. Therefore, it might be that other factors are also responsible for individual friendship quality.

The next hypothesis predicted that girls would be more prosocially oriented compared to boys. However, the results rejected the hypothesis as it showed that there was no relationship between adolescents' type of SVO and their gender. This indicated that gender differences did not influence SVO. This result confirmed a previous study by Kuhlman and Marshello (1975) that proposed that there are no gender differences in SVO. However, the present study results disagree with previous studies, which stated that boys were more individualistic, while girls were more prosocially oriented (Eisenberg et al., 2005; Derkx et al., 2014; Iedema & Poppe, 1999).

The third hypothesis was that girls are more likely to have higher friendship quality than boys. Confirmed by the results of present study, girls demonstrated higher positive friendship quality compared to boys. However, no differences were found in negative friendship quality. This might be explained by looking at a previous study by Kuttler et al. (1999), which stated that girls had greater positive features of friendship than boys. This possibly leads to girls reporting higher friendship quality.

Lastly, I examined the relationship between SVO and friendship quality and age. The hypothesis was, as they grow older, the friendship quality increases and they become prosocially oriented. However,

the results rejected the hypotheses. This study found, that there was a significantly weak negative relationship between age and negative friendship quality, such that, as age increase, negative friendship quality decreases. Nonetheless, there was no relationship between positive friendship quality and age. This might explain friendship as a factor that changes during adolescence, as teenagers are more likely to spend an increased amount of time with their friends (Crockett et al., 1984; La Greca & Prinstein, 1999). This might be the reason for a decrease in negative friendship quality.

Furthermore, the current results shows that there was no relationship between SVO and age. This confirmed previous study results conducted by Van Lange, et al. (1997), which suggested that different social interaction experiences influences the development of SVO and resulted in different type SVO that someone has during specific period. This findings might be explained by Kelley and Thibaut's (1978) study, who proposed that prosocial, individualistic and competitive orientations were established based on different forms of social interactions experienced from early childhood to young adulthood, which later are also shaped by experiences during adulthood. Thus, it could be concluded that there is no development of SVO in adolescence.

There are a number of limitations in this study. First, the ranges of participants' age are large, meaning that this study did not capture the results that specifically represent adolescents. For future study, it might be useful to just include participants within adolescents' age range to assess exclusively, the exact pattern of SVO and friendship quality within adolescence. Second, this study did not consider

attachment as one of the variables to assess. It might be essential to consider including attachment in the future study, since attachment security is a part of SVO and is essential in a lasting healthy relationship (Van Lange et al., 1997).

In summary, the present study showed that there was no relationship between SVO and friendship quality in adolescents. Also, there was no gender effect in SVO but there was a gender effect in friendship quality, such that girls have higher positive friendship quality compared to boys. The results also indicated that adolescents' negative friendship quality decreased as age increased and there was no significant difference in SVO with age. Conclusively, the present study results provide information that someone's SVO does not affect the quality of their friendship, but it is possible that it influences the number of friends they have.

REFERENCES

Au, W. T., Kwong, J. Y. Y. (2004). Measurements and effects of social-value orientation in social dilemmas: A review. In R. Suleiman, D. Budescu, I. Fischer & D. Messick (eds.), *Contemporary Psychological Research on Social Dilemmas* (pp. 71-98). Cambridge: Cambridge University Press.

Berndt, T. J. (1982). The features and effects of friendships in early adolescence. *Child Development*, 53, 1447-1460.

Berndt, T. J. (2002). Friendship quality and social development. *Current Direction in Psychological Science*, 11(1), 7-10.

Bukowski, W. M., Hoza, B., & Boivin, M. (1994). Measuring friendship quality during pre- and early adolescence:

The development and psychometric properties of the Friendship Qualities Scale. *Journal of Social and Personal Relationships*, 11, 471-484.

Chesney, T., Chuah, S., & Hoffmann, R. 2016. How user Personality and social Value orientation influence avatar-mediated friendship. *Information Technology & People*, 29(4), 688-716.

Crockett, L. , Losoff, M., & Petersen, A. C. (1984). Perceptions of the peer group and friendship in early adolescence. *Journal of Early Adolescence*, 4, 155-181.

De Dreu, C.K.W., & Boles, T. (1998). Share and share alike or winner take all? Impact of social value orientation on the choice and recall of decision heuristics in negotiation. *Organizational Behavior and Human Decision Processes*, 76, 253-267.

Derks, J., Lee, N. C., & Krabbendam, L. (2014). Adolescent trust and trustworthiness, role of gender and social value orientation. *Journal of Adolescence*, 37, 1379-1386.

Eek, D., & Gärling, T. (2008). A new look at the theory of social value orientations: Prosocials neither maximize joint outcome nor minimize outcome differences but prefer equal outcomes. In A. Biel, D. Eek, M. Gustafsson, & T. Gärling (Eds.), *New issues and paradigms in research on social dilemmas* (pp. 10-26). New York: Springer.

Eisenberg, N., Cumberland, A., Guthrie, I. K., Murphy, B. C., & Shepard, S. A. (2005). Age changes in prosocial responding and moral reasoning in adolescence and early adulthood. *Journal of Research on Adolescence*, 15(3), 235-260.

Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development*, 63, 103-111.

Furman, W., & Collins, W. A. (2009). Adolescent romantic relationships and experiences. In Poorthuis, A. M. G., Thomaes, S., Denissen, J. J. A., van Anken, M. A. G., & de Castro, B. O. (2012). Prosocial tendencies predict friendship quality, but not for popular children. *Journal of Experimental Child Psychology*, 112, 378-388.

Iedema, J. & Poppe, M. (1999). Expectations of others' social value orientations in specific and general populations. *Personality and Social Psychology Bulletin*, 25(12), 1443 – 1450.

Kagan, S., & Madsen, M. C. (1971). Cooperation and competition of Mexican, Mexican-American, and Anglo-American children of two ages under four instructional sets. *Developmental Psychology*, 5, 31-39.

Kelley, H. H., & Thibaut, J. W. (1978). *Interpersonal relations: a theory of interdependence*. New York: Wiley.

Knight, G. P., Dubro, A. F., & Chao, C. C. (1985). Information processing and the development of cooperative, competitive, and individualistic social values. *Development Psychology*, 21, 37-45.

Kuhlman, D. M., Camac, C. R., Cuhna, D. A. (1986). Individual differences in social orientation. In H. A. M. Wilke, D. M. Messick & C. G. Rutte (eds.), *Experimental Social Dilemmas* (pp.

151–176). Frankfurt: Verlag Peter Lang.

Kuhlman, D. M., & Marshello, A. (1975). Individual differences in game motivation as moderators of preprogrammed strategic effects in prisoner's dilemma. *Journal of Personality and Social Psychology, 32*, 922-931.

Kuttler, A. F., La Greca, A. M., & Prinstein, M. J. (1999). Friendship qualities and social-emotional functioning of adolescents with close, cross-sex friendships. *Journal of Research on Adolescence, 9*(3), 339-366.

La Greca, A. M., & Prinstein, M. J. (1999). The peer group. In W. K. Silverman & T. H. Ollendick (Eds.), *Developmental issues in the clinical treatment of children and adolescents* (pp. 171–198.) Needham Heights, MA: Allyn & Bacon.

Liebrand, W. B. G., Jansen, R. W. T. L., Rijken, V. M., & Suhre, C. J. M. (1986). Might over morality: Social values and the perception of other players in experimental games. *Journal of Experimental Social Psychology, 22*, 203-215.

Mann, L., Harmoni, R., & Power, C. (1989). Adolescent decision-making: the development of competence. *Journal of Adolescence, 12*, 265-278.

McClintock, C. G. (1972). Social motivation – a set of propositions. *Behavioral Science, 17*, 438-454.

McClintock, C. G., & Allison, S. (1989). Social value orientation and helping behavior. *Journal of Applied Social Psychology, 19*, 353- 362.

McClintock, C. G., & Moskowitz, J. M. (1976). Children's preferences for individualistic, cooperative, and competitive outcomes. *Journal of Personality and Social Psychology, 34*, 543–555.

McClintock, C. G., & Van Avermaet, E. (1982). Social values and rules of fairness: A theoretical perspective. In Liebrand, W. B. G., Jansen, R. W. T. L., Rijken, V. M., & Suhre, C. J. M. (1986). Might over morality: Social values and the perception of other players in experimental games. *Journal of Experimental Social Psychology, 22*, 203-215.

McGuire, K. D., & Weisz, J. R. (1982). Social cognition and behavior correlates of preadolescence chumship. *Child Development, 53*, 1478-1484.

Messick, D. M., & McClintock, C. G. (1968). Motivational bases of choice in experimental games. *Journal of Experimental Social Psychology, 4*, 1-25.

Rubin, K., Bukowski, W., & Parker, J. (2006). Peer interactions, relationships, and groups. In N. Eisenberg, W. Damon & R.M. Lerner (Eds). *Handbook of child psychology: Vol. 3, Social, emotional, and personality development* (6th ed.) (pp. 571-645). John Wiley & Sons Inc, Hoboken, NJ US.

Peters, S., Peper, J. S., Van Duijvenvoorde, A. C. K., Braams, B. R., & Crone, E. A. (2016). Amygdala–orbitofrontal connectivity predicts alcohol use two years later: a longitudinal neuroimaging study on alcohol use in adolescence. *Developmental Science, 1*-11.

Van Lange, P. A. M. (1999). The pursuit of joint outcomes and equality in outcomes: An integrative model of social value orientation. *Journal of Personality and Social Psychology*, 77, 337-349.

Van Lange, P. A. M., De Cremer, D., Van Dijk, E., & Van Vugt, M. (2007). Self-interest and beyond: Basic principles of social interaction. In A. W. Kruglanski & E. T. Higgins (Ed.), *Social psychology: Handbook of basic principles* (pp. 540-561). New York: Guilford Press.

Van Lange, P. A. M., & Folmer, C. P. R. (2007). Social value orientation. In R. F. Baumeister, & K. D. Vohs.(Ed.) *Encyclopedia of social psychology* (pp 924-926).

Van Lange, P. A. M., Otten, W., De Bruin, E. N. M., & Joireman, J. A. (1997). Development of prosocial, individualistic, and competitive orientations: Theory and preliminary evidence. *Journal of Personality and Social Psychology*, 73, 733-746.