

APPENDIX

Appendix A. FRAMEWORK

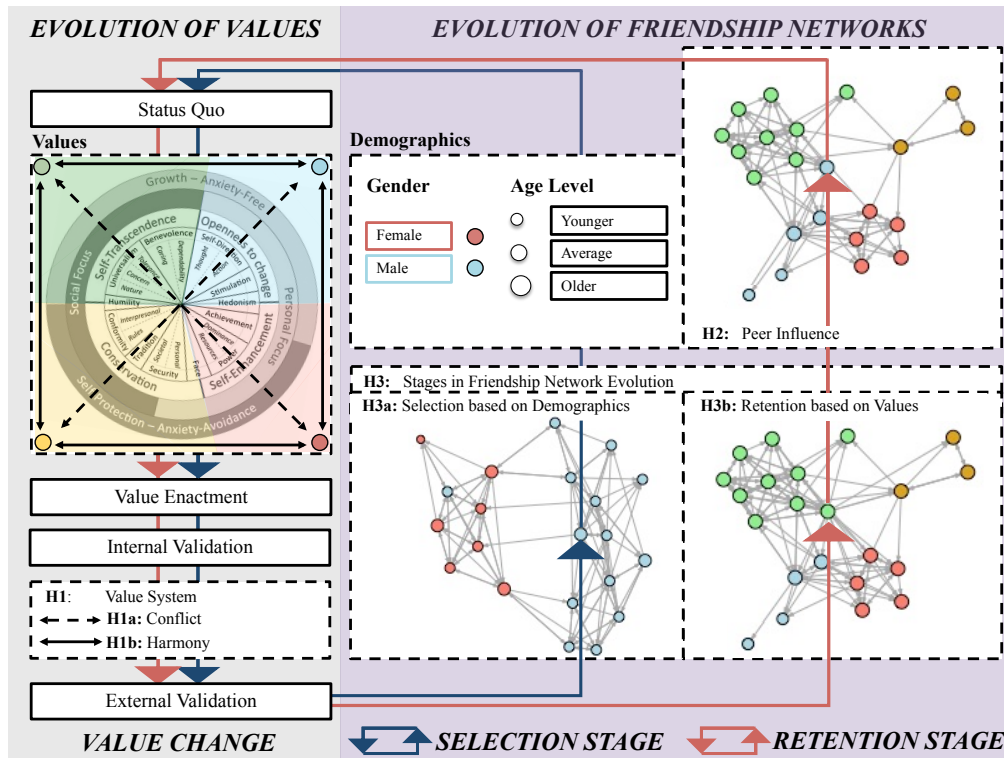


Figure A.1: Theoretical framework for the co-evolution of values and friendship networks

A **status quo** in adolescents' value systems is achieved, if the **enactment** of prioritized values does not create any conflicts in light of the theory of basic human values (Schwartz et al., 2012). But the **status quo** can be challenged according to dialectical theory (Neale & Northcraft, 1991), if adolescents are not only validating their value systems **internally**, seeking congruence regarding the goals underlying their prioritized values, but are also validating their value systems **externally**, leading to a continuous cycle of **internal and external validation** as proposed in teleological theory (March & Olsen, 1979).

According to life-cycle theory (Levinson, 1978), the context, in which adolescents validate their value systems, prescribes a **logic or code** for the **evolution of friendship networks**, which drives adolescents' actions and decisions regarding friendship selection. Evolutionary theory (Aldrich, 1979) introduces two stages in the evolution of friendship networks – a **selection stage**, where new ties are initiated and explored based on available resources and **manifest traits** such as demographic attributes and a **retention stage**, where existing ties are maintained based on **latent traits** such as values.

Appendix B. MEASURES

Appendix B.1. Values

Table B.1: *Structure of values (Conservation vs. Openness to change)*, Source: [Schwartz et al. \(2012\)](#)

Higher order values	Basic human values	Description
Conservation	Security	Individuals, who value security require safety, harmony, and stability on the society-, dyadic- and individual level (Kluckhohn, 1951 ; Maslow, 1959). If security values primarily serve collective interests, stability is required for a group of alters with whom one identifies, such as the emphasis on social order, reciprocation of favors, sense of belonging, family security, civil (e.g. national) security. However, if security values serve individual interests, stability is primarily required on the individual level, such as the importance to feel a sense of belonging.
	Conformity	In order to facilitate smooth everyday interactions, individuals who value conformity are restraining socially disruptive actions, inclinations or impulses, which might upset or harm others or violate social norms (Freud, 1933 ; Kohn & Schooler, 1983 ; Parsons, 1991). As a result, such individuals want to honor parents and elders and place great emphasis on being obedient, self-disciplined, and polite.
	Tradition	Around the world, individuals in groups value symbols and practices as part of traditions and customs that represent their shared experience in the past as well as the fate they share in the future (Sumner, 1906). Such practices can be religious rites, beliefs, and norms of behavior (Radcliffe-Brown, 1952) symbolizing a group's solidarity, expressing its unique positioning, and presumably providing a guarantee for its survival (Durkheim, 1964 ; Parsons, 1991). Individuals, who value tradition emphasize acceptance of-, or respect and commitment for customs and ideas imposed by their culture or religion, such as humility, devotion, moderation, or acceptance of one's place and role in life.
Openness to change	Self-direction	Individuals who value self-direction are driven by the intrinsic motivation as described by the theory of self efficacy (Bandura, 1977 ; Deci & Ryan, 1975 ; White, 1959) such as creativity, curiosity, or discovering things on their own. Furthermore, they require autonomy and independence in interpersonal relationships (Kluckhohn, 1951 ; Kohn & Schooler, 1983 ; Morris, 1956), such as the freedom to choose their own goals, or to make up their mind independently.
	Stimulation	Those who value stimulation seek variety in order to maintain an optimal level of activation (Berlyne, 1960 ; Houston & Mednick, 1963 ; Maddi, 1961 ; Farley, 1986), and search for excitement, novelty, and challenge in life (Deci & Ryan, 1975).

Table B.2: *Structure of values (Self-enhancement vs. Self-transcendence)*, Source: Schwartz et al. (2012)

Higher order values	Basic human values	Description
Self-enhancement	Achievement	Achievement values emphasize the demonstration of competence in social interactions. On the one hand, individuals who value ambition or personal success want to demonstrate competence according to social- and cultural standards of excellence in order to obtain resources for survival and social approval (Maslow, 1959; Rokeach, 1973; Scott & Scott, 1965). On the other hand, McClelland <i>et al.</i> (1953) defines the motivation for achievement as the goal to meet internal standards of excellence (Deci & Ryan, 1975).
	Power	Power values focus on the attainment or preservation of a dominant position within the social system. Thus, individuals who value power are driven by the need to attain social status (Durkheim, 1964; Parsons, 1991), prestige, and control or dominance over people and resources (Korman, 1974; Schutz, 1958; Allport, 1961; Gordon, 1960), such as the search for authority, wealth, social power, social recognition, or the preservation of one's public image.
Self-transcendence	Benevolence	The concern for the prosperity of groups composed of close alters is referred to as benevolence. It entails the need for positive social interactions (Schwartz & Bilsky, 1987; Kluckhohn, 1951) and affiliations (Korman, 1974; Maslow, 1959). It emphasizes the preservation and enhancement of true friendship, mature love and prosperity for people with whom personal interactions are frequent. Individuals, who value benevolence are striving to be helpful, loyal, forgiving, honest, and responsible friends. Benevolence might be triggered if people realize that the welfare within their social systems increases through their prosociality.
	Universalism	Individuals who value universalism are driven by the motivational goals of understanding, appreciation, tolerance, and protection for the welfare of all people and for nature (Maslow, 1959). In contrast to benevolence values, the needs underlying universalism values become apparent when individuals come into contact with people outside their social group. Exposures such as these might trigger the realization that broad-mindedness, accepting different cultures, aiming for social justice and equality may help to avoid conflicts. Universalism needs might also be revealed if individuals become aware of the scarcity of natural resources and thus realize that unity with nature and protecting the natural environment will help to sustain the resources on which life depends.

Swiss Version: Here we briefly describe different people. Please read each description and think about how much that person is or is not like you. Please put an X in the box to the right that shows how much the person described is like you.

It's important for him/her...

001. ...to care for nature	not at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	very much
002. ...to show that his/her performance is better than the performance of others		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
003. ...to maintain traditional values and ways of thinking		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
004.to figure things out himself/herself		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
005. ...be tolerant towards all kinds of people and groups		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
006. ...to be wealthy		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
007. ...to live in a strong state that can defend its citizens		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
008. ...to make all kinds of new experiences		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
009. ...to be able to tell others what to do		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
010. ...to obey all the laws		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
011. ...to take care of every need of his/her close ones		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
012. ...to have the freedom to choose what to do		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
013. ...that everyone be treated justly		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure B.2: *Portrait Value Questionnaire (Swiss version)*, Source: [Schwartz et al. \(2012\)](#)

Polish Version: Here we briefly describe different people. Please read each description and think about how much that person is or is not like you. Please put an X in the box to the right that shows how much the person described is like you.

It's important for him/her...

001. ...to care for nature	not at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	very much
002. ...to show that his/her performance is better than the performance of others		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
003. ...to maintain traditional values and ways of thinking		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
004.to figure things out himself/herself		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
005. ...be tolerant towards all kinds of people and groups		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
006. ...to live in a strong state that can defend its citizens		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
007. ...to make all kinds of new experiences		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
008. ...to be able to tell others what to do		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
009. ...to obey all the laws		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
010. ...to take care of every need of his/her close ones		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
011. ...to have the freedom to choose what to do		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
012. ...that everyone be treated justly		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
013. ...to be independent in shaping your views		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
014. ...that their country is stable and secure		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
015. ...to spend time for yourself		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
016. ...to avoid annoying others		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure B.3: *Portrait Value Questionnaire (Polish version) Part 1*, Source: [Schwartz et al. \(2012\)](#)

Polish Version: Here we briefly describe different people. Please read each description and think about how much that person is or is not like you. Please put an X in the box to the right that shows how much the person described is like you.

It's important for him/her...

017. ...that the weak and vulnerable in society are protected	not at all <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> very much
018. ...that people do whatever you tell them	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
019. ...never to think that you deserve more than others	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
020. ...that no one ever be humbled	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
021. ...to always have something different to do	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
022. ...to take care of the people close to you	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
023. ...to have the power that money can buy	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
024. ...to avoid diseases and protect your health	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
025. ...never to violate rules or regulations	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
026. ...to make your own decisions about life	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
027. ...to be wealthy	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
028. ...that the people you know have full confidence in you	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
029. ...to take part in activities to protect nature	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
030. ...never to annoy or irritate anyone	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
031. ...to protect your public image	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>
032. ...to help people dear to you	<input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/> — <input type="checkbox"/>

Figure B.4: Portrait Value Questionnaire (Polish version) Part 2, Source: [Schwartz et al. \(2012\)](#)

Polish Version: Here we briefly describe different people. Please read each description and think about how much that person is or is not like you. Please put an X in the box to the right that shows how much the person described is like you.

It's important for him/her...

033. ...to feel safe and secure	not at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	very much
034. ...to be a reliable and trustworthy friend		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
035. ...to take risks that make life more exciting		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
036. ...to have the power to make people do what you want		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
037. ...to be independent in planning your activities		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
038. ...to follow the rules even if no one watches		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
039. ...to be successful		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
040. ...to respect the customs of your family and your religion		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
041. ...to listen to and understand people that are different from you		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
042. ...to enjoy the pleasures of life		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
043. ...that everyone in the world have equal opportunities in life		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
044. ...to be modest		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
045. ...to figure things out yourself		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
046. ...to understand the traditional customs of your culture		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
047. ...to own expensive things that show your wealth		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
048. ...to protect the environment from destruction and pollution or contamination		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure B.5: Portrait Value Questionnaire (Polish version) Part 3, Source: [Schwartz et al. \(2012\)](#)

Polish Version: Here we briefly describe different people. Please read each description and think about how much that person is or is not like you. Please put an X in the box to the right that shows how much the person described is like you.

It's important for him/her...

049. ...to have fun in any situation	not at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	very much
050. ...that people appreciate your achievements		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
051. ...never to be humiliated		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
052. ...that your country can defend itself against all threats		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
053. ...never to annoy or anger anyone		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
054. ...to avoid anything that is dangerous		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
055. ...to be satisfied with what you have and not ask for more		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
056. ...that all his friends and family can rely on you completely		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
057. ...to accept people even if you disagree with them		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure B.6: *Portrait Value Questionnaire (Polish version) Part 3*, Source: [Schwartz et al. \(2012\)](#)

Appendix B.2. Friendship Quality

How strong is your friendship with your classmates?

Please answer the question on the following scale.

1. I don't spend any of my spare time with him/her.
2. I hardly spend any of my spare time with him/her.
3. Occasionally, I spend some of my spare time with him/her.
4. I regularly spend some of my spare time with him/her.
5. I spend a lot of my spare time with him/her.
6. I practically spend every minute of my spare time with him/her.

001. pupil 1	no friendship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	very close friendship
002. pupil 2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
003. pupil 3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
004. pupil 4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
005. pupil 5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
006. pupil 6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
007. pupil 7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
008. pupil 8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
009. pupil 9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
010. pupil 10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
011. pupil 11		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
012. pupil 12		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure B.7: *Companionship perspective of Friendship Quality Scale* - Source: [Bukowski et al. \(1994\)](#)

Appendix C. METHODOLOGY

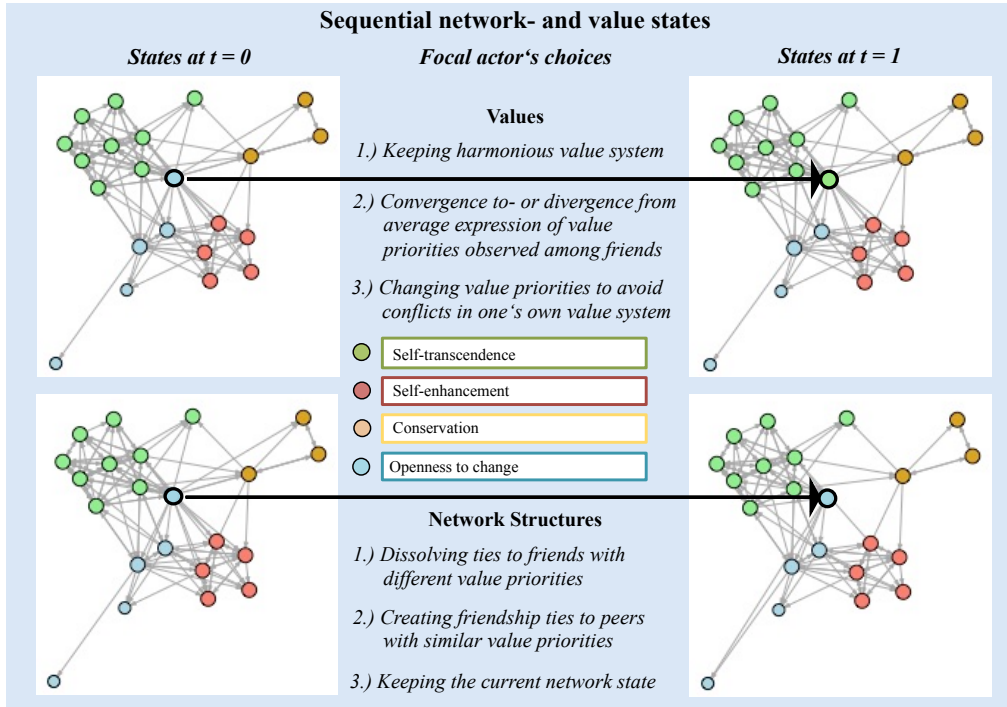


Figure C.8: Stochastic actor oriented network models (SAOMs), Source: [Snijders et al. \(2010\)](#)

The following network endogenous effects are used:

- *Outdegree* $s_i^{net}(x) = x_i$ measures the average number of outgoing links, and can be compared to an intercept in regression analyses.
- *Reciprocity* $s_i^{net}(x) = \sum_j x_{ij}x_{ji}$ is the tendency of actors to reciprocate ties to each other.
- *Transitive triplets* $s_i^{net}(x) = \sum_{j=1}^n x_{ij}e^{\alpha} \{1 - (1 - e^{-\alpha})^{\sum_{h=1}^n x_{ih}x_{hj}}\}$ in its variation of geometrically weighted edgewise shared partners models situations, where a friend of a friend (an advisor of an advisor) is nominated by the focal actor as friend (is asked for advice by the focal actor).
- *Indegree popularity* $s_i^{net}(x) = \sum_j x_{ij} \sum_h x_{hj}$ controls for dispersion in indegrees and investigates if somebody who already has a lot of incoming ties is more popular as a target for further friendship nominations.
- *Outdegree activity* $s_i^{net}(x) = x_i^2$ controls for the tendency to nominate friends depending on the number of current friendship nominations.
- *Reciprocal degree related activity* $s_i^{net}(x) = x_i x_i^r$ controls for the tendency to nominate friends depending on the number of current friendship nominations that are reciprocated.

- *Transitive reciprocal triplets* $s_i^{net}(x) = \sum_{jh} x_{ij}x_{ji}x_{ih}x_{hj}$ controls for the tendency for reciprocated friendship nominations to be embedded in transitive triplets.

The following value related selection effects are used:

- *ego effects* $s_i^{net}(x) = v_i x_{i+}$ measure the tendency to initiate friendship relationships based on one's *value priorities*.
- *alter effects* $s_i^{net}(x) = \sum_{j=1}^n x_{ij}v_j$ measure the tendency for peers to be popular as friends based on their *value priorities*.
- *dyadic effects* $s_i^{net}(x) = \sum_{j=1}^n x_{ij}\{sim_{ij} - sim\}$ if $x_{i+} > 0$ or 0 if $x_{i+} = 0$, measure the tendency for peers to initiate friendship relationships with each other based on their similarity on *gender, age, value priorities*, whereby $sim_{ij} = (1 - (v_i - v_j)) * (v_{max} - v_{min})^{-1}$ and $sim = n^{-1} \sum_{i=1}^{n_i} \sum_{j=n_i+1}^n (1 - (v_i - v_j)) * (v_{max} - v_{min})^{-1}$
- *reciprocity * dyadic effects* $s_i^{net}(x) = \sum_j x_{ij}x_{ji} \sum_{j=1}^n x_{ij}\{sim_{ij} - sim\}$ if $x_{i+} > 0$ or 0 if $x_{i+} = 0$, measure the tendency for peers to reciprocate friendship relationships with each other based on their similarity on *gender, age, value priorities*, whereby $sim_{ij} = (1 - (v_i - v_j)) * (v_{max} - v_{min})^{-1}$ and $sim = n^{-1} \sum_{i=1}^{n_i} \sum_{j=n_i+1}^n (1 - (v_i - v_j)) * (v_{max} - v_{min})^{-1}$

The following effects for value change are used:

- *Linear shape* $s_i^{val}(z) = z_i$ effects control for the general tendency to change one's value priorities.
- *quadratic shape* $s_i^{val}(z) = z_i^2$ effects measure the tendency to change value priorities depending on one's current priority on specific values.
- *average similarity* $s_i^{val}(x, z) = x_{i+}^{-1} \sum_{j=1}^n x_{ij}\{sim_{ij} - sim\}$ if $x_{i+} > 0$ or 0 if $x_{i+} = 0$, measures the tendency to adapt one's value priorities to one's friends, whereby $sim_{ij} = (1 - (v_i - v_j)) * (v_{max} - v_{min})^{-1}$ and $sim = n^{-1} \sum_{i=1}^{n_i} \sum_{j=n_i+1}^n (1 - (v_i - v_j)) * (v_{max} - v_{min})^{-1}$
- *constant covariate effects* $s_i^{val}(x, z) = z_i v_i$ or $s_i^{beh}(x, z) = z_i v_i$ measure the main effects from one's *gender, age* on one's value priorities.
- *average alter covariate effects* $s_i^{val}(x, z) = z_i \sum_{h=1}^n x_{jh} v_h$ or $s_i^{beh}(x, z) = z_i \sum_{h=1}^n x_{jh} v_h$ if $x_{j+} > 0$ or 0 if $x_{j+} = 0$ measure the effects of the average expression of *gender, age* among one's friends on one's value priorities.
- *varying covariate effects* $s_i^{val}(x, z) = z_i v_i$ or $s_i^{beh}(x, z) = z_i v_i$ measure the main effects from one's *complementary value priorities* on one's value priorities.

Appendix D. RESULTS

Appendix D.1. Evolution of values in the dynamic context of friendship networks

Table D.3: Evolution of values in the dynamic context of friendship networks

		Self-transcendence		Conservation		Self-enhancement		Openness to change	
		theta	sig	theta	sig	theta	sig	theta	sig
<i>friendship selection:</i>									
1st period	rate	6.038	***	6.659	***	6.315	***	6.274	***
		0.446	[1, 0]	0.576	[1, 0]	0.449	[1, 0]	0.493	[1, 0]
		6.251	***	6.692	***	6.710	***	6.508	***
2nd period	rate	0.405	[1, 0]	0.466	[1, 0]	0.440	[1, 0]	0.478	[1, 0]
		-1.317	***	-1.372	***	-1.352	***	-1.429	***
density	eval	0.145	[0, 1]	0.122	[0, 1]	0.127	[0, 1]	0.138	[0, 1]
		2.964	***	2.811	***	2.893	***	2.826	***
reciprocity	eval	0.186	[1, 0]	0.233	[1, 0]	0.228	[1, 0]	0.245	[1, 0]
		0.474	***	0.483	***	0.459	***	0.443	***
transitivity	eval	0.043	[1, 0]	0.045	[1, 0]	0.040	[1, 0]	0.044	[1, 0]
		-0.170	***	-0.230	***	-0.198	***	-0.176	***
reciprocity*transitivity	eval	0.051	[0, 0.999]	0.054	[0, 1]	0.043	[0, 1]	0.054	[0, 0.995]
		-0.155	***	-0.133	***	-0.142	***	-0.115	***
popularity	eval	0.025	[0, 1]	0.022	[0, 1]	0.023	[0, 1]	0.024	[0, 0.998]
		0.075	***	0.052	**	0.061	***	0.060	***
activity	eval	0.015	[1, 0]	0.019	[0.998, 0]	0.017	[1, 0]	0.018	[1, 0]
		-0.294	***	-0.246	***	-0.259	***	-0.265	***
reciprocity*activity	eval	0.049	[0, 1]	0.055	[0, 1]	0.051	[0, 1]	0.057	[0, 1]
<i>value change:</i>									
1st period	rate	1.569	***	1.553	***	1.415	***	1.497	***
		0.161	[1, 0]	0.164	[1, 0]	0.122	[1, 0]	0.155	[1, 0]
		1.168	***	1.732	***	1.434	***	1.022	***
(2nd period)	rate	0.136	[1, 0]	0.252	[1, 0]	0.133	[1, 0]	0.123	[1, 0]
		0.257	***	0.131	***	0.063	.	0.208	***
linear	eval	0.051	[1, 0]	0.035	[1, 0.001]	0.036	[0.999, 0.031]	0.050	[1, 0]
		-0.054		-0.153	***	-0.113	*	-0.110	
quadratic	eval	0.071	[0.305, 0.998]	0.051	[0.019, 1]	0.051	[0.094, 1]	0.087	[0.217, 0.999]
		1.831	**	0.895		0.459		1.529	.
average similarity	eval	0.711	[0.995, 0.166]	0.726	[0.979, 0.624]	0.719	[0.946, 0.741]	0.785	[0.987, 0.116]
<i>goodness of fit:</i>									
		μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test
		σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]
GOF (outdegree)		0.399	***	0.388	***	0.402	***	0.398	***
		0.342	[46, 33]	0.329	[48, 34]	0.325	[53, 40]	0.327	[46, 34]
GOF (behavior)		0.662	***	0.660	***	0.689	***	0.713	***
		0.328	[46, 44]	0.312	[48, 46]	0.294	[53, 52]	0.306	[46, 44]

Appendix D.2. Selection of friends across the stages in friendship network evolution

Table D.4: Selection of friends across the stages in friendship network evolution

effect	function	Self-transcendence		Conservation		Self-enhancement		Openness to change	
		μ_θ σ_θ	fisher's p fisher's [L,r] p	μ_θ σ_θ	fisher's p fisher's [L,r] p	μ_θ σ_θ	fisher's p fisher's [L,r] p	μ_θ σ_θ	fisher's p fisher's [L,r] p
<i>network endogenous:</i>									
1st period	rate	7.795 0.658	*** [1 , 0]	7.232 0.65	*** [1 , 0]	6.987 0.565	*** [1 , 0]	6.879 0.583	*** [1 , 0]
2nd period	rate	7.539 0.679	*** [1 , 0]	8.274 0.666	*** [1 , 0]	7.381 0.564	*** [1 , 0]	7.397 0.876	*** [1 , 0]
density	eval	-1.916 0.111	*** [0 , 1]	-2.096 0.121	*** [0 , 1]	-1.979 0.106	*** [0 , 1]	-1.878 0.103	*** [0 , 1]
reciprocity	eval	1.157 0.093	*** [1 , 0]	1.261 0.086	*** [1 , 0]	1.207 0.079	*** [1 , 0]	1.223 0.105	*** [1 , 0]
transitivity	eval	1.33 0.056	*** [1 , 0]	1.369 0.055	*** [1 , 0]	1.329 0.057	*** [1 , 0]	1.337 0.054	*** [1 , 0]
popularity	eval	-0.121 0.018	*** [0 , 1]	-0.116 0.019	*** [0 , 1]	-0.101 0.015	*** [0 , 1]	-0.127 0.018	*** [0 , 1]
<i>demographics based:</i>									
same age	endow	-0.162 0.160	[0.015 , 0.535]	-0.104 0.168	[0.079 , 0.499]	-0.107 0.130	[0.182 , 0.65]	-0.057 0.174	[0.244 , 0.338]
same gender	endow	0.435 0.153	*** [0.99 , 0]	0.575 0.178	*** [0.999 , 0]	0.551 0.183	*** [0.985 , 0]	0.283 0.224	*** [0.826 , 0.001]
same age	create	0.125 0.116	[0.762 , 0.13]	0.054 0.109	[0.655 , 0.537]	0.003 0.122	[0.356 , 0.335]	0.094 0.156	[0.619 , 0.111]
same gender	create	0.439 0.111	*** [0.998 , 0]	0.295 0.142	* [0.861 , 0]	0.307 0.133	* [0.863 , 0]	0.394 0.177	* [0.747 , 0]
<i>value based:</i>									
value alter	endow	0 0.074	[0.797 , 0.776]	-0.103 0.073	[0.486 , 0.763]	-0.141 0.073	[0.037 , 0.959]	-0.049 0.098	[0.505 , 0.946]
value ego	endow	0.326 0.44	[0.416 , 0.102]	-0.178 0.495	[0.18 , 0.48]	-0.282 0.461	[0.012 , 0.088]	0.565 0.621	[0.458 , 0.019]
value similarity	endow	-0.064 0.46	[0.775 , 0.763]	1.037 0.609	[0.986 , 0.2]	0.883 0.501	[0.961 , 0.181]	0.389 0.585	[0.966 , 0.523]
value alter	create	0.018 0.07	[0.657 , 0.598]	0.039 0.065	[0.547 , 0.833]	0.007 0.055	[0.63 , 0.796]	0.011 0.099	[0.799 , 0.694]
value ego	create	-0.38 0.458	[0.067 , 0.446]	0.372 0.449	[0.622 , 0.081]	0.402 0.452	[0.13 , 0.004]	-0.769 0.635	[0.005 , 0.614]
value similarity	create	0.125 0.427	[0.763 , 0.695]	-0.598 0.559	[0.385 , 0.937]	-0.133 0.475	[0.52 , 0.862]	0.185 0.608	[0.738 , 0.673]
<i>value change:</i>									
1st period	rate	1.38 0.159	*** [1 , 0]	1.673 0.162	*** [1 , 0]	1.431 0.125	*** [1 , 0]	1.394 0.143	*** [1 , 0]
2nd period	rate	1.15 0.134	*** [1 , 0]	1.277 0.177	*** [1 , 0]	1.383 0.13	*** [1 , 0]	0.826 0.114	*** [1 , 0]
linear	eval	0.279 0.045	*** [1 , 0]	0.111 0.037	*** [1 , 0.014]	0.088 0.035	* [0.999 , 0.006]	0.242 0.051	*** [1 , 0]
average similarity	eval	2.019 0.431	*** [1 , 0]	3.101 0.408	*** [1 , 0]	1.58 0.348	*** [1 , 0]	2.126 0.456	*** [1 , 0]
<i>goodness of fit:</i>									
		μ_p σ_p	χ^2 test [converge / fit]	μ_p σ_p	χ^2 test [converge / fit]	μ_p σ_p	χ^2 test [converge / fit]	μ_p σ_p	χ^2 test [converge / fit]
GOF (outdegree)		0.338 0.287	*** [46 / 36]	0.354 0.309	*** [40 / 29]	0.294 0.282	*** [46 / 34]	0.337 0.302	*** [40 / 30]
GOF (behavior)		0.556 0.305	*** [46 / 43]	0.642 0.26	*** [40 / 40]	0.681 0.249	*** [46 / 46]	0.676 0.267	*** [40 / 39]

Table D.5: Demographic segments regarding the evolution of values

effect	function	Self-transcendence		Conservation		Self-enhancement		Openness to change	
		μ_θ σ_θ	fisher's p fisher's [L,r] p	μ_θ σ_θ	fisher's p fisher's [L,r] p	μ_θ σ_θ	fisher's p fisher's [L,r] p	μ_θ σ_θ	fisher's p fisher's [L,r] p
<i>network endogenous:</i>									
1st period	rate	8.072 0.583	*** [1 , 0]	7.501 0.537	*** [1 , 0]	7.549 0.494	*** [1 , 0]	7.148 0.513	*** [1 , 0]
2nd period	rate	7.25 0.425	*** [1 , 0]	7.34 0.369	*** [1 , 0]	7.27 0.411	*** [1 , 0]	6.787 0.417	*** [1 , 0]
density	eval	-1.961 0.084	*** [0 , 1]	-1.975 0.082	*** [0 , 1]	-1.967 0.074	*** [0 , 1]	-1.88 0.081	*** [0 , 1]
reciprocity	eval	1.092 0.08	*** [1 , 0]	1.152 0.077	*** [1 , 0]	1.12 0.075	*** [1 , 0]	1.152 0.084	*** [1 , 0]
transitivity	eval	1.369 0.049	*** [1 , 0]	1.303 0.045	*** [1 , 0]	1.329 0.043	*** [1 , 0]	1.33 0.046	*** [1 , 0]
popularity	eval	-0.111 0.014	*** [0 , 1]	-0.096 0.014	*** [0 , 1]	-0.099 0.012	*** [0 , 1]	-0.121 0.015	*** [0 , 1]
<i>demographics based:</i>									
same age	eval	0.009 0.047	[0.161 , 0.164]	-0.002 0.046	[0.262 , 0.358]	0.027 0.041	[0.34 , 0.119]	0.053 0.041	[0.738 , 0.173]
same gender	eval	0.386 0.048	*** [1 , 0]	0.39 0.049	*** [1 , 0]	0.398 0.045	*** [1 , 0]	0.403 0.046	*** [1 , 0]
<i>value based:</i>									
value alter	eval	-0.035 0.028	[0.145 , 0.97]	-0.052 0.026	[0.036 , 0.986]	-0.034 0.022	[0.026 , 0.947]	-0.078 0.035	* [0.112 , 0.944]
value ego	eval	-0.071 0.035	*	0.042 0.035	[0.644 , 0.011]	0.023 0.023	[0.541 , 0.041]	-0.063 0.041	[0.017 , 0.834]
value similarity	eval	0.184 0.151	[0.955 , 0.136]	0.158 0.178	[0.845 , 0.468]	0.243 0.133	[0.981 , 0.044]	0.3 0.172	[0.992 , 0.133]
<i>value change:</i>									
1st period	rate	1.401 0.142	*** [1 , 0]	1.707 0.142	*** [1 , 0]	1.473 0.11	*** [1 , 0]	1.481 0.128	*** [1 , 0]
2nd period	rate	1.138 0.117	*** [1 , 0]	1.381 0.163	*** [1 , 0]	1.448 0.116	*** [1 , 0]	0.864 0.103	*** [1 , 0]
linear	eval	0.242 0.037	*** [1 , 0]	0.133 0.029	*** [1 , 0]	0.072 0.028	* [1 , 0.005]	0.232 0.038	*** [1 , 0]
average similarity	eval	2.482 0.401	*** [1 , 0]	2.946 0.312	*** [1 , 0]	1.912 0.291	*** [1 , 0]	2.293 0.351	*** [1 , 0]
effect from age	eval	-0.017 0.098		0.014 0.067	[0.721 , 0.737]	-0.045 0.062	[0.65 , 0.941]	0.036 0.093	[0.886 , 0.625]
effect from gender	eval	0.302 0.076	*** [1 , 0.002]	0.084 0.057	[0.917 , 0.18]	-0.126 0.055	* [0.04 , 1]	0.15 0.074	* [0.987 , 0.212]
<i>goodness of fit:</i>									
		μ_p σ_p	χ^2 test [converge / fit]	μ_p σ_p	χ^2 test [converge / fit]	μ_p σ_p	χ^2 test [converge / fit]	μ_p σ_p	χ^2 test [converge / fit]
GOF (outdegree)		0.319 0.295	*** [58 / 46]	0.351 0.299	*** [57 / 44]	0.328 0.283	*** [63 / 50]	0.333 0.31	*** [57 / 44]
GOF (behavior)		0.554 0.29	*** [58 / 55]	0.653 0.256	*** [57 / 56]	0.67 0.234	*** [63 / 63]	0.673 0.269	*** [57 / 56]

Appendix D.3. Interdependencies in the evolution of values

Table D.6: Interdependencies in the evolution of self-transcendence values

		Self-transcendence		Conservation		Self-enhancement		Openness to change	
		theta	sig	theta	sig	theta	sig	theta	sig
<i>friendship selection:</i>									
1st period	rate	6.647	***	7.847	***	7.590	***	7.533	***
		0.497	[1, 0]	0.587	[1, 0]	0.547	[1, 0]	0.573	[1, 0]
2nd period	rate	6.482	***	7.190	***	7.100	***	7.026	***
		0.390	[1, 0]	0.424	[1, 0]	0.417	[1, 0]	0.416	[1, 0]
density	eval	-0.933	***	-0.962	***	-0.980	***	-0.922	***
		0.111	[0, 1]	0.115	[0, 1]	0.111	[0, 1]	0.133	[0, 1]
reciprocity	eval	2.724	***	2.560	***	2.571	***	2.592	***
		0.110	[1, 0]	0.121	[1, 0]	0.112	[1, 0]	0.127	[1, 0]
transitivity	eval	0.561	***	0.518	***	0.522	***	0.540	***
		0.029	[1, 0]	0.031	[1, 0]	0.031	[1, 0]	0.034	[1, 0]
reciprocity*transitivity	eval	-0.363	***	-0.330	***	-0.336	***	-0.358	***
		0.040	[0, 1]	0.035	[0, 1]	0.034	[0, 1]	0.038	[0, 1]
popularity	eval	-0.171	***	-0.155	***	-0.154	***	-0.168	***
		0.021	[0, 1]	0.019	[0, 1]	0.019	[0, 1]	0.021	[0, 1]
activity	eval	0.089	***	0.097	***	0.043	***	0.051	*
		0.022	[1, 0]	0.025	[0.989, 0.003]	0.015	[1, 0.002]	0.020	[0.995, 0.009]
reciprocity*density	eval	-0.144	***	-0.121	***	-0.123	***	-0.124	***
		0.017	[0, 1]	0.017	[0, 1]	0.017	[0, 1]	0.018	[0, 1]
<i>value change:</i>									
1st period	rate	1.400	***	1.699	***	1.383	***	1.503	***
		0.134	[1, 0]	0.139	[1, 0]	0.113	[1, 0]	0.137	[1, 0]
2nd period	rate	1.166	***	1.508	***	1.373	***	1.023	***
		0.131	[1, 0]	0.177	[1, 0]	0.128	[1, 0]	0.111	[1, 0]
linear	eval	0.217	***	0.126	***	0.039	***	0.230	***
		0.048	[1, 0]	0.027	[1, 0]	0.029	[0.993, 0.059]	0.038	[1, 0]
quadratic	eval	-0.048	***	-0.235	***	-0.174	***	-0.244	***
		0.069	[0.367, 0.996]	0.026	[0, 1]	0.024	[0, 1]	0.044	[0, 1]
average similarity	eval	2.299	***	2.919	***	1.783	***	2.125	***
		0.752	[0.995, 0.092]	0.310	[1, 0]	0.292	[1, 0]	0.337	[1, 0]
<i>effects from:</i>									
Own Self-transcendence	eval			0.029		-0.089	*	0.120	*
				0.037	[0.864, 0.468]	0.038	[0.056, 0.998]	0.053	[0.996, 0.086]
Friends Self-transcendence	eval			0.011		-0.149		0.098	
				0.136	[0.761, 0.897]	0.153	[0.648, 0.983]	0.189	[0.94, 0.78]
<i>goodness of fit:</i>									
		μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test
		σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]
GOF (outdegree)		0.364	***	0.360	***	0.364	***	0.365	***
		0.344	[50, 36]	0.330	[61, 45]	0.332	[64, 47]	0.326	[56, 41]
GOF (behavior)		0.657	***	0.655	***	0.659	***	0.690	***
		0.345	[50, 46]	0.266	[61, 61]	0.250	[64, 64]	0.262	[56, 55]

Table D.7: Interdependencies in the evolution of conservation values

		Self-transcendence		Conservation		Self-enhancement		Openness to change	
		theta	sig	theta	sig	theta	sig	theta	sig
<i>friendship selection:</i>									
1st period	rate	7.671	***	7.436	***	7.743	***	7.448	***
		0.542	[1, 0]	0.588	[1, 0]	0.555	[1, 0]	0.549	[1, 0]
2nd period	rate	7.100	***	6.886	***	7.021	***	7.147	***
		0.443	[1, 0]	0.440	[1, 0]	0.413	[1, 0]	0.449	[1, 0]
density	eval	-0.982	***	-0.965	***	-0.958	***	-0.896	***
		0.115	[0, 1]	0.124	[0, 1]	0.111	[0, 1]	0.118	[0, 1]
reciprocity	eval	2.568	***	2.621	***	2.572	***	2.616	***
		0.114	[1, 0]	0.124	[1, 0]	0.118	[1, 0]	0.127	[1, 0]
transitivity	eval	0.524	***	0.536	***	0.522	***	0.536	***
		0.032	[1, 0]	0.034	[1, 0]	0.030	[1, 0]	0.032	[1, 0]
reciprocity*transitivity	eval	-0.345	***	-0.338	***	-0.330	***	-0.329	***
		0.037	[0, 1]	0.038	[0, 1]	0.034	[0, 1]	0.035	[0, 1]
popularity	eval	-0.159	***	-0.162	***	-0.155	***	-0.169	***
		0.019	[0, 1]	0.021	[0, 1]	0.019	[0, 1]	0.019	[0, 1]
activity	eval	0.089	***	0.097	***	0.043	***	0.051	*
		0.022	[1, 0]	0.025	[0.989, 0.003]	0.015	[1, 0.002]	0.020	[0.995, 0.009]
reciprocity*density	eval	-0.119	***	-0.135	***	-0.125	***	-0.130	***
		0.017	[0, 1]	0.019	[0, 1]	0.017	[0, 1]	0.017	[0, 1]
<i>value change:</i>									
1st period	rate	1.357	***	1.707	***	1.340	***	1.504	***
		0.124	[1, 0]	0.162	[1, 0]	0.106	[1, 0]	0.134	[1, 0]
2nd period	rate	1.119	***	1.837	***	1.395	***	1.006	***
		0.120	[1, 0]	0.233	[1, 0]	0.129	[1, 0]	0.118	[1, 0]
linear	eval	0.236	***	0.141	***	0.041	***	0.237	***
		0.036	[1, 0]	0.034	[1, 0.001]	0.029	[0.997, 0.058]	0.039	[1, 0]
quadratic	eval	-0.156	***	-0.163	***	-0.152	***	-0.229	***
		0.051	[0.02, 1]	0.036	[0, 1]	0.023	[0, 1]	0.050	[0, 1]
average similarity	eval	2.424	***	1.095	***	1.912	***	2.236	***
		0.370	[1, 0]	0.729	[0.993, 0.485]	0.301	[1, 0]	0.342	[1, 0]
<i>effects from:</i>									
Own Conservation	eval	0.001				-0.025		0.041	
		0.045	[0.557, 0.691]			0.036	[0.197, 0.953]	0.048	[0.725, 0.631]
Friends Conservation	eval	0.060				0.050		-0.153	
		0.171	[0.927, 0.854]			0.146	[0.958, 0.801]	0.195	[0.7, 0.963]
<i>goodness of fit:</i>									
		μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test
		σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]
GOF (outdegree)		0.370	***	0.347	***	0.363	***	0.383	***
		0.335	[59, 45]	0.332	[52, 39]	0.326	[64, 47]	0.329	[57, 42]
GOF (behavior)		0.590	***	0.662	***	0.652	***	0.678	***
		0.309	[59, 56]	0.307	[52, 52]	0.245	[64, 64]	0.280	[57, 55]

Table D.8: Interdependencies in the evolution of self-enhancement values

		Self-transcendence		Conservation		Self-enhancement		Openness to change	
		theta	sig	theta	sig	theta	sig	theta	sig
<i>friendship selection:</i>									
1st period	rate	7.478	***	8.061	***	7.196	***	7.549	***
		0.556	[1 , 0]	0.601	[1 , 0]	0.513	[1 , 0]	0.572	[1 , 0]
		6.906	***	7.471	***	6.833	***	7.377	***
2nd period	rate	0.456	[1 , 0]	0.477	[1 , 0]	0.414	[1 , 0]	0.475	[1 , 0]
density	eval	-0.933	***	-0.964	***	-1.041	***	-0.879	***
		0.109	[0 , 1]	0.105	[0 , 1]	0.118	[0 , 1]	0.116	[0 , 1]
reciprocity	eval	2.645	***	2.555	***	2.608	***	2.551	***
		0.119	[1 , 0]	0.126	[1 , 0]	0.126	[1 , 0]	0.128	[1 , 0]
transitivity	eval	0.541	***	0.510	***	0.551	***	0.522	***
		0.033	[1 , 0]	0.031	[1 , 0]	0.033	[1 , 0]	0.032	[1 , 0]
reciprocity*transitivity	eval	-0.348	***	-0.319	***	-0.365	***	-0.315	***
		0.038	[0 , 1]	0.035	[0 , 1]	0.035	[0 , 1]	0.034	[0 , 1]
popularity	eval	-0.166	***	-0.151	***	-0.157	***	-0.167	***
		0.018	[0 , 1]	0.017	[0 , 1]	0.020	[0 , 1]	0.019	[0 , 1]
activity	eval	0.089	***	0.097	***	0.043	***	0.051	*
		0.022	[1 , 0]	0.025	[0.989 , 0.003]	0.015	[1 , 0.002]	0.020	[0.995 , 0.009]
reciprocity*density	eval	-0.131	***	-0.125	***	-0.123	***	-0.130	***
		0.016	[0 , 1]	0.016	[0 , 1]	0.018	[0 , 1]	0.016	[0 , 1]
<i>value change:</i>									
1st period	rate	1.337	***	1.568	***	1.312	***	1.495	***
		0.122	[1 , 0]	0.140	[1 , 0]	0.114	[1 , 0]	0.128	[1 , 0]
		1.112	***	1.420	***	1.475	***	1.028	***
2nd period	rate	0.120	[1 , 0]	0.169	[1 , 0]	0.147	[1 , 0]	0.116	[1 , 0]
linear	eval	0.224	***	0.134	***	0.061	***	0.206	***
		0.038	[1 , 0]	0.029	[1 , 0]	0.033	[1 , 0.037]	0.035	[1 , 0]
quadratic	eval	-0.219	***	-0.231	***	-0.092	***	-0.220	***
		0.043	[0 , 1]	0.027	[0 , 1]	0.050	[0.145 , 1]	0.049	[0 , 1]
average similarity	eval	2.272	***	2.867	***	0.639	***	2.144	***
		0.414	[1 , 0]	0.308	[1 , 0]	0.705	[0.968 , 0.713]	0.321	[1 , 0]
<i>effects from:</i>									
Own Self-enhancement	eval	-0.054		0.011				-0.023	
		0.040	[0.107 , 0.972]	0.031	[0.712 , 0.8]			0.039	[0.597 , 0.898]
Friends Self-enhancement	eval	-0.104		-0.037				0.029	
		0.162	[0.767 , 0.973]	0.111	[0.827 , 0.862]			0.183	[0.917 , 0.811]
<i>goodness of fit:</i>									
		μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test
		σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]
GOF (outdegree)		0.362	***	0.372	***	0.363	***	0.373	***
		0.337	[56 , 42]	0.337	[60 , 44]	0.333	[59 , 44]	0.328	[59 , 43]
GOF (behavior)		0.584	***	0.670	***	0.680	***	0.669	***
		0.301	[56 , 52]	0.260	[60 , 59]	0.297	[59 , 58]	0.274	[59 , 57]

Table D.9: Interdependencies in the evolution of openness to change values

		Self-transcendence		Conservation		Self-enhancement		Openness to change	
		theta	sig	theta	sig	theta	sig	theta	sig
<i>friendship selection:</i>									
1st period	rate	7.360	***	7.896	***	7.766	***	7.320	***
	se	0.548	[1, 0]	0.577	[1, 0]	0.558	[1, 0]	0.597	[1, 0]
		6.931	***	7.315	***	7.063	***	7.214	***
2nd period	rate	0.427	[1, 0]	0.444	[1, 0]	0.419	[1, 0]	0.484	[1, 0]
density	eval	-0.936	***	-0.995	***	-0.962	***	-0.930	***
		0.125	[0, 1]	0.113	[0, 1]	0.115	[0, 1]	0.145	[0, 1]
reciprocity	eval	2.571	***	2.533	***	2.553	***	2.575	***
		0.127	[1, 0]	0.124	[1, 0]	0.120	[1, 0]	0.131	[1, 0]
transitivity	eval	0.529	***	0.519	***	0.518	***	0.531	***
		0.033	[1, 0]	0.031	[1, 0]	0.030	[1, 0]	0.036	[1, 0]
reciprocity*transitivity	eval	-0.344	***	-0.332	***	-0.329	***	-0.338	***
		0.038	[0, 1]	0.035	[0, 1]	0.034	[0, 1]	0.040	[0, 1]
popularity	eval	-0.164	***	-0.157	***	-0.155	***	-0.160	***
		0.021	[0, 1]	0.019	[0, 1]	0.019	[0, 1]	0.023	[0, 1]
activity	eval	0.089	***	0.097	***	0.043	***	0.051	*
		0.022	[1, 0]	0.025	[0.989, 0.003]	0.015	[1, 0.002]	0.020	[0.995, 0.009]
reciprocity*density	eval	-0.123	***	-0.119	***	-0.124	***	-0.127	***
		0.019	[0, 1]	0.017	[0, 1]	0.017	[0, 1]	0.019	[0, 1]
<i>value change:</i>									
1st period	eval	3.244	***	1.686	***	1.399	***	2.730	***
		0.976	[1, 0]	0.141	[1, 0]	0.115	[1, 0]	0.719	[1, 0]
		1.136	***	1.485	***	1.399	***	1.022	***
2nd period	eval	0.126	[1, 0]	0.175	[1, 0]	0.133	[1, 0]	0.115	[1, 0]
		0.210	***	0.136	***	0.042	***	0.221	***
linear	eval	0.038	[1, 0]	0.028	[1, 0]	0.029	[0.997, 0.048]	0.045	[1, 0]
		-0.171	***	-0.240	***	-0.173	***	-0.068	***
quadratic	eval	0.044	[0, 1]	0.024	[0, 1]	0.023	[0, 1]	0.082	[0.205, 0.999]
		2.430	***	3.031	***	1.855	***	0.845	***
average similarity	eval	0.413	[1, 0]	0.345	[1, 0]	0.295	[1, 0]	0.770	[0.973, 0.567]
<i>effects from:</i>									
Own Openness to change	eval	0.108	.	0.019	.	-0.035	.	0.039	.
		0.059	[0.991, 0.115]	0.042	[0.69, 0.394]	0.039	[0.14, 0.96]	0.039	[0.14, 0.96]
Friends Openness to change	eval	0.133	.	-0.016	.	0.010	.	0.174	.
		0.226	[0.923, 0.828]	0.155	[0.853, 0.943]	0.174	[0.775, 0.962]	0.174	[0.775, 0.962]
<i>goodness of fit:</i>									
		μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test
		σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]
GOF (outdegree)		0.380	***	0.369	***	0.352	***	0.376	***
		0.333	[56, 42]	0.330	[60, 45]	0.327	[63, 46]	0.324	[50, 39]
GOF (behavior)		0.614	***	0.665	***	0.673	***	0.720	***
		0.299	[56, 53]	0.263	[60, 60]	0.242	[63, 63]	0.304	[50, 48]

Appendix D.4. Interactions between structure and value-based friendship selection

Table D.10: Interactions between structure- and value-based friendship selection

		Self-transcendence		Conservation		Self-enhancement		Openness to change	
		theta	sig	theta	sig	theta	sig	theta	sig
<i>friendship selection:</i>									
1st period	rate	6.735	***	5.665	***	6.159	***	6.225	***
		0.564	[1 , 0]	0.504	[1 , 0]	0.403	[1 , 0]	0.556	[1 , 0]
2nd period	rate	6.257	***	6.125	***	6.524	***	6.415	***
		0.388	[1 , 0]	0.382	[1 , 0]	0.400	[1 , 0]	0.392	[1 , 0]
density	eval	-1.295	***	-1.311	***	-1.311	***	-1.207	***
		0.151	[0 , 1]	0.166	[0 , 1]	0.143	[0 , 1]	0.151	[0 , 1]
reciprocity	eval	3.249	***	3.396	***	2.928	***	2.924	***
		0.307	[1 , 0]	0.309	[1 , 0]	0.246	[1 , 0]	0.253	[1 , 0]
transitivity	eval	0.394	***	0.475	***	0.474	***	0.499	***
		0.042	[1 , 0]	0.042	[1 , 0]	0.043	[1 , 0]	0.046	[1 , 0]
reciprocity*transitivity	eval	-0.091		-0.188	***	-0.217	***	-0.200	***
		0.066	[0.016 , 0.866]	0.066	[0.02 , 0.998]	0.044	[0 , 1]	0.063	[0.001 , 0.995]
popularity	eval	-0.148	***	-0.143	***	-0.147	***	-0.147	***
		0.028	[0 , 1]	0.023	[0 , 1]	0.024	[0 , 1]	0.024	[0 , 1]
activity	eval	0.079	***	0.072	**	0.055	***	0.054	**
		0.021	[1 , 0]	0.027	[0.989 , 0.004]	0.017	[1 , 0]	0.021	[0.998 , 0.003]
reciprocity*activity	eval	-0.297	***	-0.274	***	-0.224	***	-0.254	***
		0.068	[0 , 1]	0.073	[0 , 1]	0.048	[0 , 1]	0.058	[0 , 1]
val alter	eval	0.071		-0.069		-0.064		-0.097	
		0.052	[0.825 , 0.369]	0.062	[0.073 , 0.906]	0.044	[0.025 , 0.943]	0.063	[0.245 , 0.95]
val ego	eval	0.004		-0.007		-0.018		-0.072	
		0.060	[0.495 , 0.511]	0.060	[0.479 , 0.457]	0.034	[0.617 , 0.666]	0.055	[0.151 , 0.968]
val alter*ego	eval	0.177	.	0.023	.	0.079	.	0.276	*
		0.099	[0.994 , 0.218]	0.082	[0.91 , 0.726]	0.055	[0.948 , 0.38]	0.127	[0.971 , 0.403]
val alter*ego*reciprocity	eval	-0.368	.	-0.094	.	-0.041	.	-0.448	.
		0.189	[0.229 , 0.992]	0.159	[0.822 , 0.864]	0.100	[0.769 , 0.966]	0.254	[0.687 , 0.899]
<i>value change:</i>									
1st period	rate	1.382	***	1.838	***	1.516	***	1.448	***
		0.138	[1 , 0]	0.185	[1 , 0]	0.123	[1 , 0]	0.148	[1 , 0]
2nd period	rate	1.100	***	1.341	***	1.441	***	0.938	***
		0.131	[1 , 0]	0.186	[1 , 0]	0.123	[1 , 0]	0.124	[1 , 0]
linear	eval	0.272	***	0.140	***	0.090	***	0.245	***
		0.046	[1 , 0]	0.036	[1 , 0]	0.031	[1 , 0.007]	0.045	[1 , 0]
average similarity	eval	1.704	***	2.906	***	1.693	***	2.021	***
		0.410	[1 , 0]	0.376	[1 , 0]	0.285	[1 , 0]	0.373	[1 , 0]
<i>goodness of fit:</i>									
		μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test
		σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]
GOF (outdegree)		0.391	***	0.371	***	0.422	***	0.384	***
		0.338	[41 , 33]	0.333	[38 , 28]	0.331	[53 , 43]	0.345	[39 , 30]
GOF (behavior)		0.569	***	0.657	***	0.661	***	0.705	***
		0.300	[41 , 39]	0.250	[38 , 38]	0.242	[53 , 53]	0.243	[39 , 38]

Table D.11: Interactions between structure- and value-based friendship selection

		Self-transcendence		Conservation		Self-enhancement		Openness to change	
		theta	sig	theta	sig	theta	sig	theta	sig
<i>friendship selection:</i>									
1st period	rate	6.915	***	5.605	***	6.259	***	6.845	***
		0.639	[1 , 0]	0.503	[1 , 0]	0.445	[1 , 0]	0.635	[1 , 0]
		6.414	***	5.834	***	6.404	***	6.617	***
2nd period	rate	0.385	[1 , 0]	0.367	[1 , 0]	0.391	[1 , 0]	0.450	[1 , 0]
density	eval	-1.424	***	-1.450	***	-1.448	***	-1.273	***
		0.154	[0 , 1]	0.189	[0 , 1]	0.124	[0 , 1]	0.147	[0 , 1]
		3.379	***	3.243	***	2.892	***	2.963	***
reciprocity	eval	0.281	[1 , 0]	0.329	[1 , 0]	0.277	[1 , 0]	0.270	[1 , 0]
		0.411	***	0.498	***	0.490	***	0.496	***
transitivity	eval	0.048	[1 , 0]	0.056	[1 , 0]	0.049	[1 , 0]	0.044	[1 , 0]
		-0.094		-0.161	*	-0.239	***	-0.201	***
reciprocity*transitivity	eval	0.065	[0.029 , 0.871]	0.074	[0.022 , 0.994]	0.047	[0 , 1]	0.071	[0.001 , 0.975]
		-0.143	***	-0.141	***	-0.132	***	-0.115	***
popularity	eval	0.030	[0 , 1]	0.026	[0 , 1]	0.024	[0 , 1]	0.017	[0 , 1]
		0.089	***	0.097	***	0.043	***	0.051	*
activity	eval	0.022	[1 , 0]	0.025	[0.989 , 0.003]	0.015	[1 , 0.002]	0.020	[0.995 , 0.009]
		-0.324	***	-0.274	***	-0.186	***	-0.263	***
reciprocity*activity	eval	0.066	[0 , 1]	0.083	[0 , 1]	0.046	[0 , 1]	0.058	[0 , 1]
		0.054		0.007		-0.028		-0.103	
val alter	eval	0.060	[0.554 , 0.458]	0.056	[0.477 , 0.686]	0.031	[0.124 , 0.937]	0.064	[0.109 , 0.982]
		0.038		-0.017		-0.048		-0.060	
val ego	eval	0.060	[0.693 , 0.388]	0.062	[0.426 , 0.507]	0.034	[0.454 , 0.708]	0.060	[0.188 , 0.942]
		0.177		0.067		0.102		0.234	
val alter*ego	eval	0.111	[0.995 , 0.202]	0.090	[0.922 , 0.517]	0.060	[0.969 , 0.402]	0.143	[0.968 , 0.336]
		-0.392	.	-0.183	.	-0.089	.	-0.501	.
val alter*ego*reciprocity	eval	0.219	[0.184 , 0.993]	0.179	[0.587 , 0.925]	0.117	[0.704 , 0.98]	0.285	[0 , 0.959]
<i>value change:</i>									
1st period	rate	1.412	***	1.681	***	1.314	***	1.442	***
		0.161	[1 , 0]	0.196	[1 , 0]	0.112	[1 , 0]	0.155	[1 , 0]
		1.102	***	1.480	***	1.432	***	1.019	***
2nd period	rate	0.145	[1 , 0]	0.245	[1 , 0]	0.141	[1 , 0]	0.139	[1 , 0]
		0.262	***	0.142	***	0.117	***	0.249	***
linear	eval	0.053	[1 , 0]	0.045	[1 , 0.009]	0.039	[1 , 0.011]	0.059	[1 , 0]
		0.010		-0.156	*	-0.115	*	-0.081	
quadratic	eval	0.072	[0.451 , 0.971]	0.063	[0.041 , 1]	0.051	[0.072 , 1]	0.092	[0.284 , 0.997]
		1.596	.	1.067	.	0.494	.	1.520	.
average similarity	eval	0.875	[0.965 , 0.358]	0.992	[0.937 , 0.574]	0.716	[0.938 , 0.769]	0.886	[0.975 , 0.375]
<i>goodness of fit:</i>									
		μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test
		σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]
GOF (outdegree)		0.391	***	0.371	***	0.422	***	0.384	***
		0.338	[37 , 28]	0.333	[33 , 25]	0.331	[51 , 43]	0.345	[33 , 30]
		0.569	***	0.657	***	0.661	***	0.705	***
GOF (behavior)		0.300	[37 , 34]	0.250	[33 , 33]	0.242	[51 , 50]	0.243	[33 , 32]

Table D.12: Demographics- and value-based friendship selection

		Self-transcendence		Conservation		Self-enhancement		Openness to change	
		theta	sig	theta	sig	theta	sig	theta	sig
<i>friendship selection:</i>									
1st period	rate	6.834	***	6.866	***	6.659	***	6.671	***
		0.555	[1, 0]	0.570	[1, 0]	0.468	[1, 0]	0.626	[1, 0]
		6.799	***	6.945	***	6.790	***	6.616	***
2nd period	rate	0.428	[1, 0]	0.447	[1, 0]	0.425	[1, 0]	0.484	[1, 0]
density	eval	-1.915	***	-1.986	***	-1.865	***	-1.809	***
		0.187	[0, 1]	0.194	[0, 1]	0.152	[0, 1]	0.164	[0, 1]
reciprocity	eval	3.172	***	2.959	***	2.757	***	2.677	***
		0.229	[1, 0]	0.268	[1, 0]	0.190	[1, 0]	0.278	[1, 0]
transitivity	eval	0.400	***	0.382	***	0.378	***	0.393	***
		0.046	[1, 0]	0.045	[1, 0]	0.042	[1, 0]	0.055	[1, 0]
reciprocity*transitivity	eval	-0.126	*	-0.130	*	-0.132	**	-0.154	*
		0.063	[0.001, 0.942]	0.056	[0.001, 0.972]	0.051	[0, 0.99]	0.062	[0.001, 0.984]
popularity	eval	-0.125	***	-0.091	***	-0.097	***	-0.093	***
		0.018	[0, 1]	0.018	[0, 1]	0.019	[0, 1]	0.024	[0, 1]
activity	eval	0.090	***	0.068	***	0.068	***	0.057	***
		0.017	[1, 0]	0.019	[0.998, 0]	0.017	[1, 0]	0.019	[0.999, 0]
reciprocity*activity	eval	-0.267	***	-0.212	***	-0.208	***	-0.192	***
		0.041	[0, 1]	0.047	[0, 1]	0.042	[0, 1]	0.053	[0, 1]
age alter	eval	-0.001		-0.045		-0.039		0.009	
		0.060	[0.403, 0.795]	0.047	[0.122, 0.956]	0.049	[0.104, 0.812]	0.049	[0.312, 0.491]
age ego	eval	-0.012		-0.002		-0.015		0.011	
		0.058	[0.699, 0.789]	0.051	[0.352, 0.892]	0.045	[0.271, 0.857]	0.064	[0.314, 0.734]
age alter*ego	eval	-0.009		0.003		0.043		0.040	
		0.055	[0.233, 0.798]	0.051	[0.387, 0.495]	0.054	[0.673, 0.147]	0.063	[0.662, 0.107]
gender alter	eval	0.183	*	0.119		0.071		0.076	
		0.075	[0.994, 0.003]	0.079	[0.864, 0.004]	0.072	[0.656, 0.031]	0.054	[0.868, 0.026]
gender ego	eval	-0.095		-0.052		-0.065		-0.106	.
		0.080	[0.063, 0.518]	0.058	[0.205, 0.57]	0.076	[0.014, 0.392]	0.061	[0.034, 0.821]
gender alter*ego	eval	0.500	***	0.508	***	0.580	***	0.455	***
		0.068	[1, 0]	0.079	[1, 0]	0.068	[1, 0]	0.069	[1, 0]
value alter	eval	-0.049		-0.023		0.001		-0.044	
		0.066	[0.053, 0.629]	0.039	[0.258, 0.866]	0.040	[0.265, 0.613]	0.051	[0.567, 0.71]
value ego	eval	0.053		0.046		-0.016		-0.055	
		0.055	[0.818, 0.273]	0.052	[0.793, 0.091]	0.034	[0.448, 0.484]	0.051	[0.149, 0.894]
value alter*ego	eval	0.040		0.041		0.073	*	0.132	.
		0.064	[0.851, 0.391]	0.048	[0.899, 0.31]	0.034	[0.956, 0.136]	0.078	[0.987, 0.281]
<i>value change:</i>									
1st period	rate	1.310	***	1.805	***	1.357	***	1.548	***
		0.169	[1, 0]	0.171	[1, 0]	0.119	[1, 0]	0.169	[1, 0]
		1.023	***	1.663	***	1.410	***	0.864	***
2nd period	rate	0.130	[1, 0]	0.185	[1, 0]	0.139	[1, 0]	0.109	[1, 0]
linear	eval	0.265	***	0.150	***	0.120	***	0.205	***
		0.054	[1, 0]	0.036	[1, 0]	0.039	[1, 0.014]	0.055	[1, 0]
quadratic	eval	-0.016		-0.174	***	-0.120	*	-0.080	*
		0.071	[0.411, 0.992]	0.053	[0.009, 1]	0.052	[0.058, 1]	0.087	[0.288, 0.998]
average similarity	eval	1.644	*	0.581		0.633		1.529	.
		0.780	[0.983, 0.195]	0.801	[0.95, 0.76]	0.742	[0.946, 0.795]	0.832	[0.977, 0.519]
<i>goodness of fit:</i>									
		μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test
		σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]	σ_p	[converge / fit]
GOF (outdegree)		0.452	***	0.421	***	0.433	***	0.403	***
		0.348	[37, 31]	0.339	[40, 34]	0.336	[50, 43]	0.340	[38, 30]
GOF (behavior)		0.628	***	0.685	***	0.656	***	0.757	***
		0.371	[37, 33]	0.324	[40, 40]	0.308	[50, 49]	0.284	[38, 38]

Appendix D.5. Co-evolution of values and friendship networks across panels

Table D.13: Co-evolution of values and friendship networks across maturity panels

		Early Adolescence								Late Adolescence							
		Self-transcendence		Conservation		Self-enhancement		Openness to change		Self-transcendence		Conservation		Self-enhancement		Openness to change	
effect	function	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p
		σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p
<i>friendship selection:</i>																	
1st period	rate	5.831	*** 6.668	*** 6.367	*** 6.091	*** 6.629	*** 6.834	*** 6.350	*** 6.871	*** 6.629	*** 6.834	*** 6.350	*** 6.871	*** 6.629	*** 6.834	*** 6.350	*** 6.871
		0.530	[1, 0] 0.713	[1, 0] 0.562	[1, 0] 0.591	[1, 0] 0.836	[1, 0] 1.002	[1, 0] 0.750	[1, 0] 0.875	[1, 0] 0.530	[1, 0] 0.713	[1, 0] 0.562	[1, 0] 0.591	[1, 0] 0.836	[1, 0] 1.002	[1, 0] 0.750	[1, 0] 0.875
2nd period	rate	6.207	*** 6.825	*** 6.654	*** 6.618	6.312	*** 6.394	*** 11.599	* 5.901	6.312	*** 6.394	*** 11.599	* 5.901	6.312	*** 6.394	*** 11.599	* 5.901
		0.495	[1, 0] 0.593	[1, 0] 0.525	[1, 0] 0.599	0.607	[1, 0] 0.587	[1, 0] 0.463	[1, 0] 0.567	0.495	[1, 0] 0.593	[1, 0] 0.525	[1, 0] 0.599	0.607	[1, 0] 0.587	[1, 0] 0.463	[1, 0] 0.567
density	eval	-1.324	*** -1.380	*** -1.375	*** -1.480	1.292	*** -1.315	*** -1.268	*** -1.291	-1.324	*** -1.380	*** -1.375	*** -1.480	1.292	*** -1.315	*** -1.268	*** -1.291
		0.173	[0, 1] 0.143	[0, 1] 0.146	[0, 1] 0.157	0.285	[0, 1] 0.240	[0, 1] 0.279	[0, 1] 0.315	0.173	[0, 1] 0.143	[0, 1] 0.146	[0, 1] 0.157	0.285	[0, 1] 0.240	[0, 1] 0.279	[0, 1] 0.315
reciprocity	eval	3.007	*** 2.837	*** 2.902	*** 2.766	2.931	*** 2.808	*** 2.912	*** 2.915	3.007	*** 2.837	*** 2.902	*** 2.766	2.931	*** 2.808	*** 2.912	*** 2.915
		0.239	[1, 0] 0.303	[1, 0] 0.290	[1, 0] 0.319	0.324	[1, 0] 0.346	[1, 0] 0.332	[1, 0] 0.328	0.239	[1, 0] 0.303	[1, 0] 0.290	[1, 0] 0.319	0.324	[1, 0] 0.346	[1, 0] 0.332	[1, 0] 0.328
transitivity	eval	0.888	*** 0.881	*** 0.669	*** 0.445	0.446	*** 0.494	*** 0.441	*** 0.444	0.888	*** 0.881	*** 0.669	*** 0.445	0.446	*** 0.494	*** 0.441	*** 0.444
		0.052	[1, 0] 0.052	[1, 0] 0.047	[1, 0] 0.053	0.080	[1, 0] 0.097	[1, 0] 0.079	[1, 0] 0.084	0.052	[1, 0] 0.052	[1, 0] 0.047	[1, 0] 0.053	0.080	[1, 0] 0.097	[1, 0] 0.079	[1, 0] 0.084
reciprocity*transitivity	eval	-0.213	*** -0.254	*** -0.235	*** -0.223	-0.063	*** -0.130	-0.060	-0.048	-0.213	*** -0.254	*** -0.235	*** -0.223	-0.063	*** -0.130	-0.060	-0.048
		0.166	[0, 1] 0.059	[0, 1] 0.049	[0, 1] 0.065	0.090	[0.249, 0.672]	0.136 [0.066, 0.715]	0.091 [0.296, 0.679]	0.093 [0.373, 0.531]	0.166	[0, 1] 0.059	[0, 1] 0.049	[0, 1] 0.065	0.090	[0.249, 0.672]	0.136 [0.066, 0.715]
popularity	eval	-0.062	*** -0.134	*** -0.147	*** -0.110	-0.124	*** -0.123	*** -0.120	*** -0.130	-0.062	*** -0.134	*** -0.147	*** -0.110	-0.124	*** -0.123	*** -0.120	*** -0.130
		0.032	[0, 0.989]	0.028 [0, 0.972]	0.028 [0, 0.997]	0.029 [0, 0.937]	0.035 [0, 1]	0.028 [0, 1]	0.034 [0, 1]	0.041 [0, 1]	0.032	[0, 0.989]	0.028 [0, 0.972]	0.028 [0, 0.997]	0.029 [0, 0.937]	0.035 [0, 1]	0.028 [0, 1]
activity	eval	0.069	*** 0.046	* 0.053	* 0.046	0.095	*** 0.078	* 0.091	*** 0.098	0.069	*** 0.046	* 0.053	* 0.046	0.095	*** 0.078	* 0.091	*** 0.098
		0.017	[0.999, 0]	0.022 [0.982, 0.003]	0.019 [0.997, 0]	0.022 [0.991, 0.003]	0.030 [0.989, 0.003]	0.036 [0.977, 0.025]	0.032 [0.991, 0.005]	0.030 [0.999, 0.001]	0.017	[0.999, 0]	0.022 [0.982, 0.003]	0.019 [0.997, 0]	0.022 [0.991, 0.003]	0.030 [0.989, 0.003]	0.036 [0.977, 0.025]
reciprocity*activity	eval	-0.280	*** -0.232	*** -0.238	*** -0.231	-0.342	*** -0.316	*** -0.334	*** -0.350	-0.280	*** -0.232	*** -0.238	*** -0.231	-0.342	*** -0.316	*** -0.334	*** -0.350
		0.063	[0, 1] 0.068	[0, 0.998]	0.062 [0, 1]	0.073 [0, 0.999]	0.068 [0, 1]	0.074 [0, 1]	0.067 [0, 1]	0.063	[0, 1] 0.068	[0, 0.998]	0.062 [0, 1]	0.073 [0, 0.999]	0.068 [0, 1]	0.074 [0, 1]	0.067 [0, 1]
<i>value change:</i>																	
1st period	rate	1.809	*** 1.724	*** 1.538	*** 1.717	1.329	*** 1.408	*** 1.215	*** 1.245	1.809	*** 1.724	*** 1.538	*** 1.717	1.329	*** 1.408	*** 1.215	*** 1.245
		0.228	[1, 0] 0.225	[1, 0] 0.155	[1, 0] 0.212	0.228	[1, 0] 0.243	[1, 0] 0.199	[1, 0] 0.227	0.228	[1, 0] 0.225	[1, 0] 0.155	[1, 0] 0.212	0.228	[1, 0] 0.243	[1, 0] 0.199	[1, 0] 0.227
2nd period	rate	1.370	*** 1.959	*** 1.731	*** 1.219	0.783	*** 1.662	*** 1.162	*** 0.779	1.370	*** 1.959	*** 1.731	*** 1.219	0.783	*** 1.662	*** 1.162	*** 0.779
		0.156	[1, 0] 0.363	[1, 0] 0.192	[1, 0] 0.166	0.212	[1, 0] 0.330	[1, 0] 0.184	[1, 0] 0.177	0.156	[1, 0] 0.363	[1, 0] 0.192	[1, 0] 0.166	0.212	[1, 0] 0.330	[1, 0] 0.184	[1, 0] 0.177
linear	eval	0.215	*** 0.118	*** 0.045	0.220	0.474	*** 0.243	* 0.146	* 0.296	0.215	*** 0.118	*** 0.045	0.220	0.474	*** 0.243	* 0.146	* 0.296
		0.054	[1, 0] 0.037	[1, 0.005]	0.039 [0.993, 0.076]	0.056	[1, 0]	0.072 [1, 0.001]	0.106 [0.999, 0.051]	0.084 [0.989, 0.086]	0.054	[1, 0] 0.037	[1, 0.005]	0.039 [0.993, 0.076]	0.056	[1, 0]	0.072 [1, 0.001]
quadratic	eval	-0.079	-0.139	-0.127	-0.127	0.072	-0.280	-0.175	-0.069	-0.079	-0.139	-0.127	-0.127	0.072	-0.280	-0.175	-0.069
		0.077	[0.248, 0.999]	0.054 [0.038, 1]	0.056 [0.129, 1]	0.104 [0.273, 0.997]	0.176 [0.525, 0.765]	0.165 [0.114, 0.991]	0.133 [0.215, 0.968]	0.160 [0.258, 0.945]	0.077	[0.248, 0.999]	0.054 [0.038, 1]	0.056 [0.129, 1]	0.104 [0.273, 0.997]	0.176 [0.525, 0.765]	0.165 [0.114, 0.991]
average similarity	eval	1.901	* 0.989	0.473	0.965	1.416	0.370	1.914		1.901	* 0.989	0.473	0.965	1.416	0.370	1.914	
		0.768	[0.994, 0.122]	0.769 [0.969, 0.562]	0.772 [0.92, 0.719]	0.861 [0.974, 0.465]	1.867 [0.743, 0.517]	2.186 [0.741, 0.624]	1.970 [0.745, 0.57]	2.119 [0.82, 0.016]	0.768	[0.994, 0.122]	0.769 [0.969, 0.562]	0.772 [0.92, 0.719]	0.861 [0.974, 0.465]	1.867 [0.743, 0.517]	2.186 [0.741, 0.624]
<i>goodness of fit:</i>																	
		μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test	μ_p	χ^2 test
		σ_p [converge/fit]		σ_p [converge/fit]		σ_p [converge/fit]		σ_p [converge/fit]		σ_p [converge/fit]		σ_p [converge/fit]		σ_p [converge/fit]		σ_p [converge/fit]	
GOF (outdegree)		0.460	*** 0.433	*** 0.463	*** 0.459	0.273	* 0.279	* 0.272	*	0.460	*** 0.433	*** 0.463	*** 0.459	0.273	* 0.279	* 0.272	*
GOF (behavior)		0.346	[31, 24] 0.327	[34, 26] 0.315	[37, 31] 0.320	0.307	[15, 9] 0.320	[14, 8] 0.313	[16, 9] 0.317	0.346	[31, 24] 0.327	[34, 26] 0.315	[37, 31] 0.320	0.307	[15, 9] 0.320	[14, 8] 0.313	[16, 9] 0.317
		0.668	*** 0.670	*** 0.698	*** 0.720	0.650	*** 0.667	*** 0.699	*** 0.699	0.668	*** 0.670	*** 0.698	*** 0.720	0.650	*** 0.667	*** 0.699	*** 0.699
		0.315	[31, 30] 0.296	[34, 33] 0.292	[37, 36] 0.293	0.365	[15, 14] 0.360	[14, 13] 0.307	[16, 16] 0.340	0.315	[31, 30] 0.296	[34, 33] 0.292	[37, 36] 0.293	0.365	[15, 14] 0.360	[14, 13] 0.307	[16, 16] 0.340

Table D.14: Co-evolution of values and friendship networks across country panels

		Switzerland								Poland							
		Self-transcendence		Conservation		Self-enhancement		Openness to change		Self-transcendence		Conservation		Self-enhancement		Openness to change	
effect	function	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p	μ	fisher's p
		σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p	σ_p	fisher's [Lr] p
<i>friendship selection:</i>																	
1st period	rate	5.226	*** 5.653	*** 5.384	*** 5.491	*** 5.550	*** 11.132	*** 5.555	*** 5.554	5.226	*** 5.653	*** 5.384	*** 5.491	*** 5.550	*** 11.132	*** 5.555	*** 5.554
		0.358	[1, 0] 0.460	[1, 0] 0.348	[1, 0] 0.418	[1, 0] 0.434	[1, 0] 2.275	[1, 0] 1.681	[1, 0] 2.070	[1, 0] 0.358	[1, 0] 0.460	[1, 0] 0.348	[1, 0] 0.418	[1, 0] 0.434	[1, 0] 2.275	[1, 0] 1.681	[1, 0] 2.070
2nd period	eval	5.989	*** 6.190	*** 6.171	*** 5.977	6.435	*** 7.718	*** 7.526	*** 7.435	5.989	*** 6.190	*** 6.171	*** 5.977	6.435	*** 7.718	*** 7.526	*** 7.435
		0.323	[1, 0] 0.319	[1, 0] 0.346	[1, 0] 0.357	0.487	[1, 0] 2.340	[1, 0] 1.608	[1, 0] 1.955	0.323	[1, 0] 0.319	[1, 0] 0.346	[1, 0] 0.357	0.487	[1, 0] 2.340	[1, 0] 1.608	[1, 0] 1.955
density	eval	-1.204	*** -1.218	*** -1.240	*** -1.314	1.900	*** 2.153	*** 1.898	*** 1.885	-1.204	*** -1.218	*** -1.240	*** -1.314	1.900	*** 2.153	*** 1.898	*** 1.885
		0.121	[0, 1] 0.119	[0, 1] 0.115	[0, 1] 0.127	0.475	[0, 1] 0.402	[0, 1] 0.386	[0, 1] 0.469	0.121	[0, 1] 0.119	[0, 1] 0.115	[0, 1] 0.127	0.475	[0, 1] 0.402	[0, 1] 0.386	[0, 1] 0.469
reciprocity	eval	3.023	*** 2.884	*** 2.953	*** 2.930	2.608	*** 2.132	*** 1.404	*	3.023	*** 2.884	*** 2.953	*** 2.930	2.608	*** 2.132	*** 1.404	*
		0.195	[1, 0] 0.194	[1, 0] 0.191	[1, 0] 0.203	0.766	[1, 0] 1.220	0.999, 0.002]	0.811	[1, 0] 0.195	[1, 0] 0.194	[1, 0] 0.191	[1, 0] 0.203	0.766	[1, 0] 1.220	0.999, 0.002]	0.811
transitivity	eval	0.510	*** 0.523	*** 0.500	*** 0.472	0.195	*** 0.207	*** 0.218	*** 0.216	0.510	*** 0.523						