

The Predictive Relationship between Temperament and Friendship in Undergraduate Students

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ABSTRACT

The aim of the study is to explore and predict the relationship between temperament and friendship. For this purpose **The Temperament and Character Inventory (TCI)** by Cloninger et al. (1994) was adapted to Indian context. **Dimensions of friendship Scale (DFS)** by Chandna and Chadha (1986) was used to assess the variable Friendship. The participants for this research were undergraduate students (50 boys and 50 girls). According to the findings of the study, it was observed that Respondents with Novelty Seeking Temperament did not have a significant relationship with the sub dimensions that are required to form friendship bonds. Harm avoidance Temperament shared a negative significant relationship between 'Acceptance', 'Understanding', and 'Spontaneity' (sub dimensions of friendship). A significant positive correlation was found between Reward Dependence Temperament and 'Trust'. Whereas Persistence Temperament had a significant negative correlation with 'Acceptance' dimension of friendship only. In addition, the findings revealed that Reward Dependence temperament respondents scored the highest on friendship scale. With ratings ranging from 'Extremely desirable' to 'Strongly Desirable'. Respondents with Persistent Temperament scored 'Mildly Desirable' on the friendship scale. Novelty seeking temperament respondents scored the highest on 'neutral' level in friendship. The sample had a very low percentage of Harm Avoidance temperament who did fall under the range between 'Strongly desirable' and 'Mildly desirable' level of friendship.

1. Introduction

It was believed in ancient Greek that one's personality was also interpreted as one's temperament. This temperament depended on the stability of various fluids. These fluids were also known as "humors". According to Hippocrates, the Greek, there were four main humors. The strength of these humors are responsible for a peculiar pattern of personality. The humor associated with blood in excess, was thought to produce a very cheerful "*Sanguine*" temperament. A humor linked with excess black bile was believed to cause a depressive "*Melancholic*" temperament. An exuberance of yellow bile fluid was considered a liability for an angry "*Choleric*" temperament. And lastly lavishness of phlegm was seen as the basis of a calm "*Phlegmatic*" temperament.

In 1991, Robert Cloninger had attempted to throw a light on this abstruseness with a psychobiological model of personality development. According to this model, the personality consists of two independent multidimensional domains. He termed the two domains as "temperament" and "character." Temperament consisted of four independent dimensions such as novelty seeking, harm avoidance, reward dependence, and persistence. The key characteristic of Temperament is that they are independently heritable. Temperament manifest early in life and are highly reliable and unalterable over time. The temperament factors that are observed in childhood can help in predicting adolescent and adult behaviour (Douglas, 2002). Cloninger further contemplated that there were three of the brain's neurotransmitters which are involved in influencing three important aspects of temperament. According to the Cloninger

model, the brain's neurotransmitters such as dopamine promotes Novelty Seeking temperament, serotonin inhibits Harm Avoidance temperament and nor epinephrine inhibits Reward Dependence temperament. (Cloninger et al., 1993).

Rightly said by Österberg (2007) that human beings are social creatures and the vital experience for a social being is to make friends (Österberg, 2007). Developmental Psychology revealed that *adolescence* is a period for expanding and enriching interpersonal relations. The social context of development with time broadens, diversifies and transforms. An adolescent spends more time with his friends than with his parents. Friendship, in general, is a multidimensional phenomenon which is difficult to explain. Almost everyone have their own experiences when it comes to being a friend. And we may be inclined to think that this friendship is intuitively understood. The friendship is a type of reciprocal voluntary relationship. This relationship is characterized by having qualities like, being together, intimacy (closeness), affection, loyalty, and mutual commitment. (Dunn, 2008)

These qualities are also indicative of friendship in the adolescence and adulthood period. On the other hand, Bukowski et al. (2009) identified friendship between teenagers as having the following features: reciprocity, similarity of partners, and coordination and responsiveness of activities. There are researches which have collected substantial amount of literature on the qualities and characteristics of children's friendships (Berndt 2004; Bukowski et al. 2009; Ladd 2009; Rubin et al. 2011). The early researches focused on understanding how children selected their friends (e.g., child-peer proximity) which was the distinguishing features of children's friendships. Friendship has been linked to one's

adjustment (Buote et al., 2007). It has also been studied as a function of a child and his friends' victimization, overt and relational aggression (Ellis & Zarbatany, 2007). Confiding, a dimension of friendship, emerged as an important trait in friendship having a positive correlation with academic achievement. (Ahmed, 2019). There are researches which have emphasized on how the selection and identification has given way to exploring friendships in terms of interpersonal interactions with peer groups (Bukowski et al. 2009; Ladd 2009). And also in terms of assessing the negative and positive aspects of friendships (Berndt 2004; Goswami 2009; Holder and Coleman 2009). Extraversion in adults is strongly correlated with positive well-being (Steele et al. 2008). Temperament traits comparable to extraversion are also linked to happiness in children (Holder and Klassen 2010). As children are at a different level of development with respect to temperament/personality, emotions, and maturity than older populations therefore the contribution of friendships to children's well-being may differ from that of adult. Temperament may also control and influence social development through interactions between characteristics and the environment (Sanson et al., 2002). Keeping these studies in mind how an individual with specific temperament engages and establishes their friendships bonds can be a crucial factor to be analyzed in an educational setting.

Temperament

'The temperament is generally described as biologically based components of personality which are set to be independent heritable, manifest early in life and involve pre conceptual biases in perception, memory and habit formation.'
(Cloninger et al., 1994)

On the basis of various definitions many sub dimensions have evolved of temperament like: Novelty Seeking, Harm Avoidance, Reward Dependence and Persistence.

Friendship

Friendship, a state of enduring affection, esteem, intimacy, and trust between two people. In all cultures, friendships are important relationships throughout a person's life span.

(Encyclopedia Britannica-
<https://www.britannica.com/topic/friendship>)

Friendship can be defined in terms of sub dimensions like enjoyment, acceptance, trust, respect, mutual assistant, confiding, understanding and spontaneity.

2. Research Questions

The following questions crossed the mind of the investigator related to the variables under study:

- How do individuals with different temperament respond to friendship?
- What are the qualities of friendship that are high in different temperamental individuals?

3. Objectives of the study

The objectives formulated for the study are:

- (1) To find out the relationship between Novelty Seeking (a dimension of temperament) with the sub dimensions of Friendship.
- (2) To find out the relationship between Harm Avoidance (a sub-dimension of temperament) with the sub dimensions of Friendship.
- (3) To find out the relationship between Reward Dependence (a sub-dimension of temperament) with the sub-dimensions of Friendship.
- (4) To find out the relationship between Persistence (a sub-dimension of temperament) with the sub-dimensions of Friendship.
- (5) To find out the level of friendship in different sub-dimensions of Temperament.

4. Method

The research is a descriptive type of research. It is based on the survey of the samples 'opinion.

Participants

The sample of the study consisted of 100 undergraduate students (50 boys and 50 girls). The sample was selected through stratified random sampling in which the students belonged to different faculties namely, sciences (30%), social sciences (35%) and management (25%).

Data Collection Tools

Dimensions of friendship Scale (DFS) developed by Chandna and Chadha (1986) was used for the Friendship variable. According to the scale, the variable friendship has the following sub dimensions: Dimension 'A': Enjoyment, Dimension 'B': Acceptance, Dimension 'C': Trust, Dimension 'D': Respect, Dimension 'E': Mutual Assistance, Dimension 'F': Confiding, Dimension 'G': Understanding and Dimension 'H': Spontaneity

The test-retest reliability for the whole scale was found out to be 0.78. Validity of the present scale was found out with help of cross validation. The method of person product moment was applied. Overall cross validation was found out to be 0.78.

For collecting the data on the variable 'Temperament', the investigator used **The Temperament and Character Inventory (TCI)** by Cloninger et al. (1994). The Temperament and Character Inventory (TCI) consists of 240 items. 38 Items were measuring Temperament with four (4) sub- dimensions: T1- Novelty Seeking (NS), T2- Harm Avoidance (HA), T3- Reward Dependence (RD) and T4- Persistence (P)

The test retest reliability of the quantitative scores over six months is moderately high i.e, **0.85** for TCI. After adapting the scale in Indian context, the Cronbach's reliability calculated was 0.71. Hence the scale had a good reliability. (Mohsen, 2011)

5. Results

Objective 1- To find out the relationship between Novelty Seeking temperament with the sub dimensions of Friendship.

Hypothesis 1- There is no significant relationship between Novelty Seeking temperament with the sub dimensions of Friendship.

Table-1 Correlation between Novelty Seeking temperament with the sub dimensions of Friendship.

		Correlations								
		Novelty Seeking	Enjoyment	Acceptance	Trust	Respect	Mutual Assistance	Confiding	Understanding	Spontaneity
Novelty Seeking	Pearson Correlation	1	-.042	-.107	-.020	-.005	-.128	-.024	.000	-.009
	Sig. (2-tailed)		.676	.290	.847	.962	.206	.811	.997	.927
	N	100	100	100	100	100	100	100	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 1 shows the Pearson Correlation calculated between novelty seeking and sub dimensions of friendship. The analysis of the table displays that there is no significant correlation between novelty seeking and dimensions of friendship. Hence the null hypothesis is accepted. This shows that respondents with novelty seeking temperament do not have any relationship with the sub dimensions that are required to form friendship bonds.

Objective 2 – To find out the relationship between Harm Avoidance Temperament with the sub dimensions of Friendship.

Hypothesis 2- There is no significant relationship between Harm Avoidance Temperament with the sub dimensions of Friendship.

Table-2 Correlation between Harm Avoidance Temperament with the sub dimensions of Friendship.

		Correlations								
		Harm Avoidance	Enjoyment	Acceptance	Trust	Respect	Mutual Assistance	Confiding	Understanding	Spontaneity
Harm Avoidance	Pearson Correlation	1	.051	-.236*	-.088	-.155	-.183	-.177	-.209*	-.244*
	Sig. (2-tailed)		.611	.018	.382	.124	.068	.078	.036	.014
	N	100	100	100	100	100	100	100	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2 has tabulated the results of Pearson Correlation between Harm Avoidance Temperament with the sub dimensions of Friendship in the total sample. The results revealed that Harm Avoidance Temperament shared a negative significant relationship between ‘Acceptance’, i.e. $r(98) = -.236, p = .018$.

The negative significant relationship is also seen with ‘Understanding’, i.e. $r(98) = -.209, p = .036$ and ‘Spontaneity’, i.e. $r(98) = -.244, p = .014$. Hence the null hypothesis is rejected. The result showed that respondents with this temperament are associated with inhibition and fear of

uncertainty as a result they find it hard to ‘accept’ or be accepted, ‘understand’ the other person and be spontaneous in forming friendship bonds. Harm avoidance temperament are pessimistic by nature and hence will not in the least be spontaneous when it came to forming friendship bonds.

Objective 3 – To find out the relationship between Reward Dependence Temperament with the sub dimensions of Friendship.

Hypothesis 3- There is no significant relationship between Reward Dependence Temperament with the sub dimensions of Friendship.

Table-3 Correlation between Reward Dependence Temperament with the sub dimensions of Friendship.

		Correlations								
		Reward Dependence	Enjoyment	Acceptance	Trust	Respect	Mutual Assistance	Confiding	Understanding	Spontaneity
Reward Dependence	Pearson Correlation	1	.154	.082	.249*	.204*	.120	.126	.088	.029
	Sig. (2-tailed)		.127	.416	.013	.042	.234	.210	.383	.778
	N	100	100	100	100	100	100	100	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 reports the Pearson Correlation between Reward Dependence Temperament with the sub dimensions of Friendship. The results revealed that there is a significant positive correlation between Reward Dependence

Temperament and ‘Trust’, $r(98) = -.249, p = .013$. This positive relationship was also found to be with ‘Respect’, $r(98) = -.204, p = .042$. Hence the null hypothesis is rejected. This indicated that respondents with reward dependence temperament

manifest social attachment and are dependent on approval of others. Because of their warm and sympathetic nature they can easily build up trust in relationship and respect their friendship bonds.

Objective 4 – To find out the relationship between Persistence Temperament with the sub dimensions of Friendship.

Hypothesis 4 - There is no significant relationship between Persistence Temperament with the sub dimensions of Friendship.

Table-4 Correlation between Persistence Temperament with the sub dimensions of Friendship.

		Correlations								
		Persistence	Enjoyment	Acceptance	Trust	Respect	Mutual Assistance	Confiding	Understanding	Spontaneity
Persistence	Pearson Correlation	1	-.043	-.199*	-.182	-.175	-.100	-.011	-.114	-.065
	Sig. (2-tailed)		.668	.047	.069	.082	.321	.913	.260	.519
	N	100	100	100	100	100	100	100	100	100

*. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).

Table 4 highlights the Pearson Correlation between Persistence Temperament with the sub dimensions of Friendship. The result showed that Persistence Temperament has significant negative correlation with 'Acceptance' dimension only, $r(98) = -.199$, $p = .0047$. Hence the null hypothesis is rejected. Persistent temperament means perseverance in behaviour as being industrious, hardworking

and stable despite frustration and fatigue. Respondents with this temperament may show rigidity as this could be the reason for having a negative correlation with acceptance.

Objective 5 – To find out the level of Friendship of the four temperaments

Table-5 Percentage of the Respondents of the four Temperaments on the different levels of Friendship

		Percentage			
Rating of Friendship Scale		Novelty Seeking	Harm Avoidance	Reward Dependence	Persistence
1-	Extremely desirable	19	0	76	4
2-	Strongly desirable	13	3	53	27
3-	Moderately desirable	40	4	8	48
4-	Mildly desirable	71	4	0	24
5-	Neutral	100	0	0	0

Table 5 indicates that respondents with Reward Dependence Temperament had the 'Extremely Desirable' (76%) and 'Strongly Desirable' (53%) level of friendship. At the 'Moderately Desirable' level, respondents with Persistence Temperament had the highest score (48%). The respondents of Novelty Seeking Temperament are the ones that had 'Mildly Desirable' (71%) and 'Neutral' (100%) level of friendship. The sample had the lowest respondents with Harm Avoidance temperament who did fall under the range between 'Strongly desirable' and 'Mildly desirable' level of friendship.

6. Discussion, Suggestion and Conclusion

Respondents with Novelty Seeking Temperament did not have a significant relationship with the sub dimensions that are required to form friendship bonds, namely, enjoyment, acceptance, trust, respect, mutual assistance, confiding, understanding and spontaneity. Novelty seeking temperament corresponds to 'anger' emotion. It can be interpreted as 'Choleric' type of temperament, as given by Hippocrates. As these respondents are impulsive by nature and are easily bored, it can be said that they find it hard to stick and maintain friendship bond. They probably don't believe in 'Friendship for Forever'. One issue with people of novelty seeking temperament is that they battle to accept anything perceived as criticism. If they are criticized they will go up against such people and try to control and dictate them (Jaehing, 2019).

Harm avoidance Temperament shared a negative significant relationship between 'Acceptance', 'Understanding', and 'Spontaneity' (sub dimensions of friendship). The result showed that respondents with this temperament are associated with inhibition and fear of uncertainty as a result they find it hard to 'accept', 'understand' the other person and be spontaneous in forming friendship bonds. Spontaneity actually helps one bond as friends, it reminds oneself of the good things in life. Harm avoidance temperament are pessimistic by nature and hence will not in any way be spontaneous when it came to forming friendship bonds. According to Cloninger (1991) Harm Avoidance consists of HA1 (anticipatory worry), HA2 (fear of uncertainty), HA3 (shyness with strangers), and HA4 (fatigability and asthenia). This finding can be supported by medical research studies who have the viewpoint that Harm Avoidance results in an "anxiety proneness personality," as a recent review article of Liotta (2013) showed that almost all anxiety disorders, that is, panic disorder, obsessive-compulsive disorder, social anxiety, specific phobia, posttraumatic stress disorder, and generalized anxiety disorder, were associated with a high HA trait. Harm avoidance (HA), a personality trait is characterized by excessive worrying, pessimism, shyness, and being fearful, doubtful, and easily fatigued, which is suggested to be related to low serotonergic activity. (Lin, 2013). Another study suggests that Harm avoidance could be a good candidate to be heritable because it appears to be a consistent finding across current literature in anxious and depressed

patients independent of their cultural context. (Wachleski et al., 2008).

A significant positive correlation was found between Reward Dependence Temperament and 'Trust'. Because of their warm and sympathetic nature they can easily build up trust in relationship and respect their friendship bonds. Reward Dependence can be interpreted as the 'Sanguine' type of personality. The temporal lobes of the brain play a major role in how we process social cues, and increased activity in the anterior part of these lobes and in a brain structure called the thalamus which has been related to higher levels of reward dependence. (Schuerbeek, 2011). This finding is contrary to Cornwall (2018) article which explains that the *Sanguine* aren't particularly trustworthy as they'll be too eager to spill secrets with others, and their general flightiness can make them unreliable as they're likely to get easily distracted by other things. According to Arrowood (2014) he suggested that people with a sanguine temperament can also have trouble deeply investing themselves in their friendships. In other words, they may fall into the trap of quantity over quality - popularity over real friendship. And sometimes this reward dominance increases the likelihood that an individual will repeat his or her reward-seeking behavior in future situations, even if it is maladaptive. (Goodnight, 2006)

Persistence Temperament had a significant negative correlation with 'Acceptance' dimension of friendship only. Persistent temperament means perseverance in behaviour as being industrious, hardworking and stable despite frustration and fatigue. This can also be interpreted as 'Phlegmatic' type of temperament corresponding to 'tenacity' emotion. Respondents with this temperament may show rigidity as this could be the reason for having a negative correlation with acceptance. Parker and Asher (1993) studied the contribution of reciprocal Friendship and acceptance. Children with no reciprocal relationship were lonelier in the classroom because of lack of peer acceptance. The rigidity in this temperament might not make it congenial for peer acceptance. Contrary to a study where children identified as rejected by their peers were rated by teachers as showing higher activity rates, higher distractibility and lower persistence than popular children. (Walker, 2001). According to Cornwall (2018) the *Phlegmatic* barely expresses emotion at all. They lack 'passion', as their emotions are mostly internal. They often rely on others ordering them to do things to get motivation. All the more reason for them not to be accepted easily by others. Arrowood (2014) wrote about the negative sides of the phlegmatic temperament as they can be quite damaging to a relationship. Someone with a poisoned phlegmatic temperament can lack passion and enthusiasm. They may also become sarcastic, discouraging or even passive-aggressive.

Reward Dependence temperament respondents scored the highest on friendship scale. With ratings ranging from 'Extremely desirable' to 'Strongly Desirable'. Reward Dependence can be interpreted as the 'Sanguine' type of personality chiefly governed by the 'Love' emotion. RD are sociable, vulnerable for emotional support from others and yield quickly to social pressure. As they are sensitive to rejection or criticism. RD temperament are also responsive to sentimental appeals, they will strive in maintaining their friendship bonds. The more people they're surrounded by, the better they feel, and they're not picky about who they get to

know. They enjoy having and being surrounded by friends. While *Sanguines* enjoy being around others basically because they crave for the attention of others. It makes them feel good about the fact that they are not lonely. (Cornwall, 2018).

Novelty seeking temperament respondents scored the highest on 'neutral' level in friendship. This 'Choleric' type of temperament have a forthright style. And because they have 'take-charge' approach, they are likely to end the relationship abruptly when you may not even expect it (Jaehing, 2019). Novelty Seekers are 'alphas' of our species because they are proud and extrovert. They might be the proud warriors or the esteemed Kings in fairy tales.

Respondents with Persistent Temperament scored 'Mildly Desirable' on the friendship scale. It could be because of lack of passion and enthusiasm, they may become discouraging, sarcastic and overwhelmingly obsessive. Something that others won't find it appealing for them to befriend them.

Harm Avoidance temperament, though least in number, did fall under the range between 'Strongly desirable' and 'Mildly Desirable' level of friendship. As Cornwall (2018) has marked out that they prefer to be alone with their thoughts, rather than sharing time or possessions socially with others. Making them egotistical and selfish. As a result they are very wary of making friends. They hold themselves and others to unrealistically high standards. Because of which they get distressed easily when these standards are not met. This condition leads to self-deprecating because they themselves do not meet their own standards. And as others do not meet their standards, they become critical of others as well. (Cornwall, 2018). The flip side of novelty seeking (making one angry and impulsive) and harm avoidance (leading to fear and anxiety) aspect of temperament should be discouraged and treated properly for a sound development of personality (Ahmed, 2017) and for establishing a healthy sustainable friendship.

Parents and teachers are the role model for a child. They should embody the essential characteristic associated with friendship. When it comes to how parents and teachers form relationship with children or adolescents, they must be elements like self-understanding, empathy, frankness, critical self-assessment and how to express love. Extracurricular activities in school should be organized to integrate heterogeneous groups. It's important for students of different temperament to interact with each other. The more they interact, the more they open doors to friendship. This will help in minimizing friendship segregation on the basis of not having the same temperament. Even having different temperament can bond us in friendship. There is a common believe, that just as we belong to different temperament, there is no understanding amongst us. But in this study we did find no matter what temperament one had, they did fall under some or the other level of friendship. Teachers can undergo professional development opportunities that will help them to create positive and congenial classroom environment. And this will yield a downstream benefits on their students and their interactions with their peer group. Parental monitoring is also vital. They should directly and indirectly supervise and gather information about how their child befriends others. To conclude ***'Friendship is the hardest thing in the world to explain. It's not something you learn in school. But if you haven't learned the meaning of friendship, you really haven't learned anything.'*** - **Mohammad Ali**

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